ADDIOVAL Demosta TIPL	Vogtle Electric Generating Plant	Procedure Ne PTDB-1 TAB 8.0
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3-2-96	2 Unit 1 O' Georgia Power	Page No. 1 of 3
	1 wet	05-75-90
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TAB	DESCRIPTION	PAGE
8.1	RCS ELEVATIONS	2
8.2	MID LOOP LEVEL INSTRUMENTATION	3

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SEMI ANNUAL REVIEW

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PTDB-1	TAB 8.0	2	PAGENO 2 of 3
			TAB 8.1 RCS ELEVATIONS UNIT 1
	RCS	VEGP ELEVA	TIONS
EL. 247. EL. 224' (611 WR) EL. 207' EL. 196' EL. 196' EL. 196' EL. 196' EL. 196' EL. 196' EL. 196' EL. 196' (728 RVI EL. 172' EL. 172'	PRESS 	SG	RCP SEALS (BOTTOM EL. 190' RCF RX
			Stary & Lee 13/2/90 Reviewed By Date



st.

18015-C.Rev. 5 SECONDARY PLANT CHEMISTRY 05-76-90

1. Ballington at

NOT INCLUDED:

Is divided into various modes including MODES 4,5, AND 6 But does not involve Mid-loop issues.

18028-C, Rev. 7 LOSS OF INSTRUMENT AIR

SECTION B APPIES TO MODE 3

B6 NOTE states that if there is a loss of instrument air pressure, then MANUAL control of the SG Atmospheric Relief Valves will be required

SECTION C APPLIES TO MODES 4,5, AND 6

C5 CAUTION and step requires tripping one RHR Pump if tow are running due to RHR HX outlet valves failing full open.

C9 Requires tripping of running RHR Pump due to continued cooldown

C10 If RHR Temperature rises, actions are throt'le RHR Flow

18032-1, Rev. 4 LOSS OF 120 V AC INSTRUMENT POWER

NOT INCLUDED:

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Written independent of mode to address concerns resulting from loss of 120 V AC 1E instrument power. Primarily addresses at power issures but may address some losses that affect a shutdown condition. Examples: (a) loss of 1NY1N addresses losses of AFW instrumentation which is a Shutdown concern, (b) loss of 1BY1B addresses a loss of SR SR countrate indication which would be a shutdown concern.

18034-1, Rev. 1 LOSS OF CLASS 1E 125V DC POWER Written independent of mode to address concerns resulting from loss of 125 VDC 1E.

18038-C, Rev. 10 OPERATION FROM REMOTE SHUTDOWN PANELS Not a midloop procedure, but does include ATTACHMENT G for local operation of SG Atmospheric Relief Valves.

19#00-C, Rev. 4 ECA-0.0 LOSS OF ALL AC POWER Does not apply to the midloop situation.

MIDLOOP PROCEDURES

12000-C, Rev. 16 REFUELING RECOVERY (MODE 6 TO MODE 5)

2.1.4	WORK ACTIVITIES TECH SPECS					
2.2.13 4.1.5 4.1.10	RWST INVENTORY CONTROLS WHEN BELOW 17 MAINTAIN 1 FOOT ABOVE DAMS INSTALLED	% PRZR LEVEL MID-NOZZLE,2	FEET	IF	SG	NOZZLE

12006-C, Rev. 15 UNIT COOLDOWN TO COLD SHUTDOWN

2.1.4	WORK ACTIVITIES
2.2.6	TECH SPECS SG AVAILABLE RHR AVAILABILITY IF NOT FILLED
2.2.17 D4.2.15	RWST INVENTORY CONTROLS WHEN BELOW 17 % PRZR LEVEL

12007-C, Rev. 14 REFUELING ENTRY (MODE 5 TO MODE 6)

2.1.17	WORK ACTIVITIES
2.2.6	TECH SPECS
2.2.15	RWST INVENTORY
4.1.1	CONTROLS WHEN BELOW 17 & PRZR LEVEL
4.1.3	MAINTAIN 1 FOOT ABOVE MID-NOZZLE

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13005-1, Rev. 10 REACTOR COOLANT SYSTEM DRAINING

2.1.2	MAINTAIN 1 FOOT ABOVE MID-NOZZLE AND 5 INCHES IF BURP-
2.1.3	TREND RHR PUMP PARAMETERS WHEN AT 1 FOOT ABOVE MID-
2.1.8	CONTROLS IF DRAINING DOWN TO PERFORM MAINTENANCE ON REACTOR HEAD, SGS , OR RCP SEALS
2.1.9	ACTIONS IF LEVEL INDICATION LOST
2.1.10	ONLY ONE DRAIN PATH AT A TIME
2.1.11	NOT DRAIN FROM SAME LOOP AS BEING MONITORED FOR LEVEL
2.2.1	TECH SPECS ON SG LEVELS
4.1.2	HAS MAINTENANCE INSTALL TYGON TUBING AND DEFEAT RHR SUCTION VALVES AUTO CLOSURE INTERLOCK WHEN DRAINING VIA RCDT
4.1.8	CAUTION NOT DRAIN FROM SAME LOOP BEING MONITORED FOR RCS LEVEL
4.1.12	PLACES TYGON HOSE LEVEL INDICATIONS IN SERVICE
4.1.13	MAINTENANCE TO INSTALL REMOTE RCS TEMPORARY LEVEL INDICATION IF DRAINING BELOW 25 % PRZR LEVEL
4.1.15	CAUTION FOR DRAINAGE RATE AFFECT ON TYGON TUBING
4.1.18	USE NITROGEN TO ASSISTING DRAINING SG TUBES
4.1.19	CAUTIONS AND NOTES ABOUT DRAINING TO 1 FOOT ABOVE MID- NOZZLE
4.1.20	NOTE ABOUT DRAINING TO 1 FOOT ABOVE MID-NOZZLE
4.2.2	MAINTENANCE TO INSTALL REMOTE RCS TEMPORARY LEVEL INSTRUMENTATION IF DRAINING RCS BELOW 25%
4.2.11	PLACEMENT TO TYGON HOSE LEVEL INDICATION IN SERVICE
4.2.12	MAINTENCE TO INSTALL REMOTE RCS TEMPORARY LEVEL INSTRU- MENTATION
4.2.14	AUTION FOR DRAINAGE RATE AFFECT ON TYGON TUBING
4.2.18	"SE NITROGEN TO ASSISTING DRAINING SG TUBES
4.2.19	CAUTIONS AND NOTES ABOUT DRAINING TO 1 FOOT ABOVE MID- NOZZLE
4.2.21	NATE AFOUT DRAINING TO 1 FOOT ABOVE MID-NOZZLE
CHECKLIST	1% SG TUBE BUNDLE DRAINING

13011-1, Rev. 18 RESIDUAL HEAT REMOVAL SYSTEM

2.1.6 WHENEVER 1 FOOT ABOVE MID-NOZZLE THE RHR FLOW SHOULD BE LIMITED IN RANGE FROM 3000 TO 3500 GPM.

4.8.1 CAUTION THAT EXCESSIVE FLOWRATE DURING PUMPDOWN WITH UPPER INTERNALS ASSEMBLY INSTALLED COULD LEAD TO VOID FORMATION IN RHR PUMP SUCTION.

17006-1, Rev. 11 ANNUNCIATOR RESPONSE PROCEDURES FOR ALB 06 ON PANEL 1A2 ON MCB

PAGE	7	RCS I	LEVEL I	LOW PER	ANNUN	ICIATOR W	WINDOW	AO3		
PAGE	21	RHR I	PUMP OV	/ERLOAD	TRIP	INITIATE	ES 1803	9-C,LOSS	OF	RHF
PAGE	36	RWST	EMPTY	LEVEL	ALARM	INITIATE	ES REFI	LLING		

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18004-C, Rev. 6 REACTOR COOLANT SYSTEM LEAKAGE

SECTION B ADDRESSES MODES 4 OR 5:

 B1 NOTE IF RCS LEAKAGE IS DETECTED WHILE OPERATING WITH RCS LEVEL BELOW PRZR INDICATION RANGE OR WITH SG NOZZLE DAMS INSTALLED THEN GO TO 18019-C, LOSS OF RHR SYSTEM.
 B5 RHR PUMP OPERATION INDICATIONS

18006-C, Rev. 2 FUEL HANDLING EVENT

12 SENDS OPERATOR TO 18004-C,RCS LEAKAGE IF SPENT FUEL POOL OR REACTOR CAVITY LOWERS UNEXPLAINABLY

> 18019-C, Rev. 7 LOSS OF RESIDUAL HEAT REMOVAL

SECTION A APPLIES TO MODES 4 OR 5 ENTIRE SECTION ADDRESSES MIDLOOP CONCERNS

SECTION B APPLIES TO MODE 6 WITH HEAD REMOVED ENTIRE SECTION ADDRESSES MIDLOOP CONCERNS TO SOME EXTENT SYMPTOMS ADDRESS MIDLOOP CONCERNS A1 CAUTION, NOTE AND STEP ADDRESSES WCAP ISSUES

18020-C, Rev. 3 LOSS OF COMPONENT COOLING WATER

2RNO

IF ONE TRAIN OF CCW CAN NOT BE PLACED IN SERVICE, THEN INITIATE 18019-C, LOSS OF RHR

IF NON-AFFECTED TRAIN RHR CAN NOT BE PLACED IN SERVICE, THEN INITIATE 18019-C,LOSS OF RHR

18021-C, Rev. 4 LOSS OF NUCLEAR SERVICE COOLING WATER SYSTEM

5RNO

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IF RHR CAN NOT BE ESTABLISHED TO AN OPERATING NSCW TRAIN, THEN INITIATE 18019-C, LOSS OF RHR

> PTDB-1 TAB 8.0, Rev. 2 PICTORIAL AIDS

8.2 SHOWS LAYOUT OF REMOTE AND LOCAL TEMPORARY MID-LOOP INSTRUMENTATION



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neseevine no.		REVISION	PAGENO
VEGP	12000-C	16	2 of 15
		A Construction of the Cons	ana mang menghawan ana ang manang mang mang mang mang ma
2.2	LIMITATION	S	
2.2.1	In Mode 5,	shutdown margin shall	be greater than or
	. equal to t 3.1.1.2, F	he limit specified in T igure 3.1-2.	echnical Specification
2.2.2	When in Mo	de 5, with loops filled	, at least one
FORCES	in operati	on, and either:	shall be operable and
REINLOO	a. One a	dditional RHR train sha	11 be operable, or
mil	b. The s	econdary side water lev	el of at least two
/	range	l Generators shall be gr level. (Technical Spe	eater than 17% of wide cification 3.4.1.4.1)
2.2.3	While in M	lode 5, one RHR train ma	y be inoperable for u
	RHR train	is operable and in oper	ation. (Technical
	Specificat	ion 3.4.1.4.1)	
2.2.4	While in M	iode 5 with the RCS lcop	s not filled, two RHR
	shall be i	In operation. Reactor M	east one RHR train lakeup Water Values
	1208-04-17	5, 1208-04-176, 1208-04	-177, and 1208-U4-183
	stops), ex	cept 1208-U4-176 and 12	108-U4-177 may be
	opened for	short periods of time	for chemistry control
	a setpoint	of less than or equal	to 2.30 times
	background	1. (Technical Specifica	ition 3.4.1.4.2)
2.2.5	When in Mc	de 6, with the water le	vel greater than or
	least one	RHR train shall be oper	r Vessel Flange, at table and in operation
	(Technical	Specification 3.9.8.1)	and an operation
2.2.6	When in Mc	de 6, with the water le	evel less than 23 feet
	be operabl	Reactor Vessel Flange, Le and at least one RHR	two RHR trains shall
	(Technical	Specification 3.9.8.2))
2.2.7	While in M	dodes 4, 5, and 6 with t	the Reactor Vessel Hea
	on, at les Protection	ast one of the following	Cold Overpressure
	a. Two I	Power Operated Relief Va	lves (PORV) with life
	setti	ings which do not exceed	the limits
	estat 3.4-4	4, or	actfication Figure
	b. Two H of 4	RHR Suction Relief Valve 50 psig ±37, cr	es each with a setpoir
	c. The I	RCS depressurized with a	an RCS vent capable of
	relie	eving at least 670 gpm w	water flow at 470 psis
	(= = = =	miner operindrion 3.	4.2.3)

ROCEDURE NO.		REVISION	PA	GE NO.
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2.2.8	While in Mo Boron Injec	des 5 and 6, at 1 tion Flow Paths s	east one of hall be op	f the following erable.
	a. A flow Boric the Re Storag operab	path from the Bon Acid Transfer Pump actor Coolant Syst e Tank in specific le, or	ric Acid St p and a Cha tem if the cation 3.1	torage Tank via arging Pump to Boric Acid .2.5a is
	b. The fl Tank (Refuel 3.1.2. 3.1.2.	ow path from the H RWST) via a Chargi ing Water Storage 5b is operable, 1)	Refueling W Ing Pump to Tank in Sp (Technical	Vater Storage the RCS if th pecification Specification
2.2.9	The tempera coolant in 70 degrees Steam Genera (Technical S	ture of both the p the Steam Generato when the pressure ator is greater th Specification 3.7.	orimary and ors shall b of either nan 200 psi .2)	d secondary be greater than coolant in the g.
2.2.10	While in Mod Instrumental Specification to Recorder AT SHUTDOWN	de 5 two channels tion shall be oper on 3.3.1). One ch NR-45 with the SC alarm operable.	of Source able (Tech annel shou)URCE RANGE	Range Nuclear mical ild be selected HI FLUX LEVEL
2.2.11	While in Mod shall be ope the Control Containment 3.9.2)	de 6 both Source R erable with contin Room and one with and Control Room.	lange Neutr nuous visua audible i (Technica	on Flux Monito 1 indication in ndication in th 1 Specification
2.2.12	While in Mod with the Rea fully tension maintained a shall be main whichever is 1208-U4-175, shall be close stops), exce short period the Hi Flux setpoint of background.	de 6 (whenever fue actor Vessel Head oned or with the h at 0.95 or less, o intained greater t more restrictive 1208-U4-177, 120 osed and secured i ept 1208-U4-176 an is of time for che at Shutdown Alarm less than or equa (Technical Speci	l is in th Closure Bo ead remove r the boro han or equ . Additio 8-U4-183 a n position d 177 may mistry con is operab l to 2.30 fication 3	e Reactor Vesse lts less than d) Keff shall b n concentration al to 2000 ppm nally, valves nd 1208-U4-176 (by mechanical be opened for trol provided le with a times .9.1)
2.2.13	While in Mod Reactor Vess the RWST wil 99,404 gallo	les 5 and 6, with el Flange elevati 1 be operable wit ons (9% of instrum	the RCS le on (194 fe h a minimu ent span)	vel below et elevation), m volume of of water at a

PAGE NO.	REVISION		ROCEDURE NO.
4 of 15	16	12000-C	VEGP
	DITIONS	INITIAL CON	3.0
ed to the RCS at a	tem is in service align al flow of 3000 gpm.	The RHR Sys minimum tot	3.1
DT) is aligned to y draining	Coolant Drain Tank (RC and/or Refueling Cavit	The Reactor support RCS operations.	3.2
System is in servic	nt Cooling Water (CCW)	The Compone	3.3
ng Water (NSCW) tra	e Nuclear Service Cooli ce.	At least on is in servi	3.4
peration and highes	Range Channels are in c ected to Recorder NR-45	Two Source channel sel	3.5
SHUTDOWN alarm	RANGE HI FLUX LEVEL AT le,	a. SOURCE operat	
ment and Control Ro	e count rate in Contair le.	b. Audibl operat	
	sel Head not installed.	Reactor Ves	3.6
s closed.	o Transfer Canal Gate :	Fuel Pool 7	3.7
and locked.	be Gate Valve is closed	Transfer Tu	3.8
INITIALS			
	<u>s</u>	INSTRUCTION	4.0
	NOTE		
le s	sterisk (*) steps beside NITIALS spaces indicate teps that generate dditional documents.		
	ING MODE 6 OPERATIONS	POST REFUE	4.1
NUST Dort	by the Outage Area and when necessary, AD ng Cavity level to sup Vessel and Head assem "Residual Heat Removal	As directed Supervisor the Refuel the Reactor per 13011, System ⁽¹⁾ .	4.1.1
	Residuar near Remova?	System".	

OCEDURE NO.		REVISION	PAGENO	and define the state of the day of the state of the
VEGP	12000-C	16		5 of 15
4.1.2	OBTAIN fro Change Bir Surveillan all deferr surveillan Mode 5 ent	om the Control Room Mode ader or OBTAIN from the ace Tracking Coordinator red (not performed) ace tests required for ary.		INITIALS
	SCHEDULE a test proce	and COMPLETE those appli dures prior to Mode 5 e	cable ntry.	
		KOTE		
		As a precaution, Contai Building Penetrations T Specification 3.9.4 wil established during peri Reactor Vessel Head mov	nment echnical l be cds of ement.	
		CAUTION		
		Inadvertent Containment Ventilation Isolation (may occur during the mo of the Reactor Vessel H from the head stand to cavity. Ensure Health initiates compensatory to prevent inadvertent actuations.	CVI) vement ead the Physics actions	
4.1.3	Prior to s Assembly	etting the Upper Intern	als	
	a. NOTIF the C will flow.	Y Chemistry that closur ontainment Equipment Ha change containment vent	e of tch ilation	
	b. NOTIF Conta System	Y Maintenance to reset inment Personnel Lock In m,	the nterlock	
	c. PERFO Build Verif:	RM 14210, "Containment ing Penetrations ication-Refueling",		
	d. NOTIF Conta RE-00 to 10	Y Chemistry to reset the inment Low Range Area M 02 and RE-0003 alarm set 0 mR/hour.	e PERMS onitors tpoint	
	e. INITIA "Spent Purif:	ATE RWST cleanup per 13 t Fuel Pool Cooling And Ication System".	719,	

PROCEDURE NO.		REVISION	PAGE NO.
VEGP	12000-C	16	6 of 15
UNIT NO.			INITIALS
4.1.4	Prior to se Head, PERFO	tting the Reactor Vessel RM the following:	
	a. VERIFY Overpr orerab trafo Specif	at least one of the Cold essure Protection Systems le by performing one of llowing (Technical ication 4.4.9.3):	
	(1) R V O S L s	HR Suction Relief Valves ERIFY RHR Suction Valves pen per 14000, "Operations hift And Daily Surveilland ogs" and INITIATE shiftly urveillance per 14000,	Se
	(2) R V 1 D 1 D	CS Vent Path - ERIFY an RCS Vent Path per 4000, "Operations Shift Ar aily Surveillance Logs" ar NITIATE shiftly surveillar er 14000,	nd nd nce
	(3) P P 01 f	LACE the Cold Overpressure rotection System (COPS) ir peration by performing the ollowing:	
	(1	a) ENSURE PRZR PORV BLOCK VLV COLD OVERPRESSURE Handswitches HS-8000G 8000H are in the BLOCK position,	CNTL and
	(1	b) REQUEST 1&C to perform analog channel operati test on both PORV Actu Channels per 24518, "R Coolant Pressure (Wide Protection II P-403 Am Channel Operational Te Channel Calibration" a 24519, "Reaccor Coolam Pressure (Wide Range) Protection I P-405 Ans Channel Operational Te And Channel Calibratio	an Ional Mation Meactor Range) Malog est And Mat Mat Mat Mat Mat Mat Mat Mat Mat Mat

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UNIT NO.			INITI
. •	(c)	VERIFY the following annunciators in alar	m
		1 A COLD OP LOW A TEMP, (ALB 12 C	UCT RCS 04),
		2 B COLD OP LOW A TEMP (ALB 12 CO	UCT RCS 5).
	(d)	ARM the A and B COPS placing handswitches HS-8000G and 8000H t position,	by o ARM
	(e)	VERIFY the following annunciators alarmed arming COPS:	upon
		1 A COLD OP ACTU HV-8000A NOT FU (ALB 12 E06),	VLV IL OPEN
		<u>2</u> B COLD OP ACTU HV-8000B NOT FU (ALB 12 F06).	VLV VLL OPEN
	(f)	ENSURE PRZR PORVs PV and 456A are closed handswitches in AUTO	and the
	(g)	ENSURE OPEN PRZR POF valves HV-8000A and	W BLOCK HV-8000B.
		NOTE	
	Thi Spe req	s step satisfies Techn cification surveilland uirement 4.4.9.3.1.c.	ical e
	(h)	VERIFY the following annunciators reset:	ş
		1 A COLD OP ACTU HV-8000A NOT FT (ALB 12 E06),	VLV JLL OPEN
		2 B COLD OP ACTU HV-8000B NOT FT (ALB 12 F06).	VLV JLL OPEN
b	. VERIFY S A end B and tagg Cooldown	AFETY INJECTION Pumps breakers are racked or ed per 12006, "Unit To Cold Shutdown".	ut

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			2
UNIT NO.	No. of Concession, Special Society, Spec		INITIAL
(4.1.5) J	While oper 17% press feet elev should be	rating with the RCS level be urizer level (approximately ation) the following control in effect:	10w 207 .s
	a. Tygor any being level (appr elevel	n tube watch is required time the RCS level is g changed while the RCS l is below 17% roximately 207 feet ation) pressurizer level,	
	(1)	Periodic comparison checks should be made every 4 hour between the Control Room Temporary RCS Level Monitor and the Tygon tube,	s
	(2)	The Control Room Monitors should agree within 7 perce of scale with the Tygon tub	nt e,
	(3)	Two out of three Level Moni must agree before draining below the top of the hot le (188 feet 3 inches),	tors RCS S
	(4)	If neither Control Room RCS Level Monitor is available, then a continuous Tygon tub watch should be established while RCS level is below 17 pressurizer level.	e I
	(5)	DETERMINE closure status of Containment Equipment Hatch and ENSURE hatch is capable being closed within 57 minu or ENSURE hatch is closed p to reducing RCS level below three feet below the Reacto Vessel Flange (191 ft. el.)	of tes rior r
	(6)	A review of all Containment penetrations addressed in 14210, "Containment Buildin, Penetrations - Refueling" should be accomplished to determine those which have been opened by manual means and an info LCO generated for those identified,	g or

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HOUEDURE NO.		Inc.		PAGE	NC
VEGP	12000-C		16		> 9 of 15
UNIT NO.					INITIALS
	(7)	Exce Read of t shal	ept when installing to ctor Vessel Head, a r two incore thermocoup 11 be available,	the minimum ples	
	(8)	REQU desi ther setp abov per Soft	JEST I&C reset the Ignated ERF incore mocouples alarm point to alarm at 10' ve desired temperatur 00410-C, "Computer tware Control",	°F ce	
	(9)	If S inst cpen a ve the plen	G Nozzle Dams are to alled and no cold le ing is to be establi ant path is required Reactor Vessel upper num.	be g lshed, from	
		This by:	vent path can be sa	tisfied	i
		(a)	Removing a pressuri manway, or	zer	
		(b)	Removing a Steam Ge manway on a hot leg will not be dammed,	nerator that or	
		(c)	Removing three pres	surizer	
	(10)	If S inst open a ve the Plen manw be d	G Nozzle Dams are to alled and a cold leg ing is to be establi nt path is required Reactor Vessel Upper um by removing an SG ay on an HL that wil ammed.	be shed, from 1 not	
	(11)	If i at of leve conf oper, gpm,	t is intended to ope ne foot above mid-no l, the preferred RHR iguration is one tra ating with a flow of	rate zzle in 3000	

VEGP			TOWNER THE	
	12000-C	1.6		10 of 15
UNIT NO.	(12) Wi (12) Wi Di Si ci	hile operating with SG N ams installed, ENSURE on afety Injection Pump is apable of being racked i perated in the hot leg njection mode if needed,	lozzle e n and	INITIALS
	(13) Wi ti pa da da	hile level is in the reg he hot legs, TREND RHR P arameters on ERF for ear etection of possible RHR egradation due to vortex	ion of ump ly Pump ing,	
4	(14) Mi al O St ir ef 16 18 cc R(ar th	inimum RCS level is one bove mid-nozzle (188 fee inches elevation) excep team Generator burping d nitial drain down. For ffective SG tube drainin evel should be lowered t 87 feet 6 inches. Upon ompletion of SG burping, CS level to 188 feet - 0 nd MAINTAIN at this leve hereafter.	foot t t for uring g, RCS o RAISE inches 1	
	(15) A Co ar re be	minimum of 4 Containmen ooling Units will be ope ad capable of being star equired while RCS level slow 191 feet elevation.	t rable ted if is	S
	b. COORDIN Supervi the Ref per 130 System'	ATE with Outage Area sor and INITIATE draini fueling Cavity to 190 fe 011, "Residual Heat Remo	ng et val	
	DE-ENER prior t	GIZE all underwater lig	hts	
	Ulber the Dee	ictor Vessel Hear is rea		The local sector and the sector of the sector of the

PROCEDURE NO.	REVISIC	NN	PAGENO
VEGP	12000-C	16	11 of 15
UNIT NO.	PRINTED PRINTED IN CONTRACTOR OF CONTRACTOR		INITIALS
4.1.7	Prior to lowering into place, DRAIN Area by opening N Support Drain.	g Reactor Vessel H N Reactor Cavity Se Reactor Cavity Sea	ead eal L
	UNIT 1: 1-1213-	-U4~088	
	UNIT 2: 2-1213-	-U4-088	IV
			IV
4.1.8	If it is necessar head lifts for O- deconning, etc., performing the li applicable steps Entry" Core Alter and ATTACH to thi	y to perform any ring inspections, then prior to ft, COMPLETE the of 12007-C, "Refue nations Checklist s procedure.	ling
4.1.9	After the Reactor lowered into plac tensioning, MAINT at less than or e	Vessel Head is e and during Head AIN RCS water leve qual to 190 feet.	1
4.1.10	If necessary, INI 1 foot above mid- 0 inches) or 189 Dams installed.	TIATE reducing lev nozzle (188 feet - feet with SG Nozz	le
4.1.11	MAINTAIN RCS temp Outlet HV-0606 fo Train B) as high exceed 130°F,	erature utilizing r Train A (HV-0607 as possible but no	RHR for t to
	Train B) as high exceed 130°F,	as possible but no	t to

PROCEDORE NO.		REVISION	PAGE NO.
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UNIT NO.			INITIA
4.1.12	NOTIFY Hea release th restrictio for the Fu the Fuel H Containmen	Ith Physics that they may be locked or posted access ins on the concrete plugs bel Transfer Tube bellows is andling Building and t Building.	In
4.1.13	Upon compl decontamin	etion of refueling cavity ation activities:	
	a. ENSUR 2 Bli drair Cavit	E Maintenance removes the nd Flanges on the 12 inch lines in the Refueling Ty,	
			IV
	b. ENSUE the T (Tech	E Maintenance has install Transfer Tube Blind Flange mical Specification 4.6.1	ed .1.a)
			IV
	c. ENSUR Coil Verii HS-12 OFF I	E the FHB HVAC Pre-heatin Thermostat is reset by fying local handswitches 2470 and 12471 are in the position.	g
	d. CLOSI Drain	Reactor Cavity Seal Supp	ort
	UNIT	1: 1-1213-U4-088	-
	UNIT	2: 2-1213-04-088	IV

VEGP	1200	00-C	REVISION	PAGE NO.
				13 01 1
UNIT NO.	-			INITIAI
4.2	MODE	E 5 EN	TRY .	
4.2.1	Prid last entr	or to t head ty) PE	Maintenance completing bolt tensioning (Mode RFORM the following:	the 5
	а.	COMP VERI are	LETE the following log FY the requirements th net for entry into Mod	s and erein e 5:
		(1)	14000, "Operations Sh And Daily Surveillanc Logs".	ift e
			OBTAIN the new cycle for the Plant Technic Book from Reactor Eng to be used for shutdo determinations.	curves al Data ineering wn margin
			If curves are not ava OBTAIN a method of pe shutdown margin deter from Reactor Engineer	ilable, rforming minations ing.
		(2)	14225, "Operations We Surveillance Logs",	ekly
		(3)	14228, "Operations Mo Surveillance Logs",	athly
		(4)	14915, "Special Condi Surveillance Logs.	tion
	b.	REVI ente	W the following for in ing Mode 5:	mpact on
		(1)	Jumper and Lifted Wir	e Log,
		(2)	Temporary Modification	Lcg,
		(3)	Equipment Clearance L	og,
		(4)	LCO Book,	Tradition, into it instances
		(5)	Outstanding Work Orde	· 8 .

		-	REVISION	PAG	ENO.		Contractions state or	And Performance
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UNIT NO.						I	NITI	AL
	c. E	NSURE est pr lub-sub for Mod complet	that all surveillance ocedures scheduled per section 4.1.2 required e 5 entry have been ed.					
	R	EVIEW hange urveil	the Control Room Mode Binder or OBTAIN from t lance Tracking Coordina	he tor.				
	d. I r S	NITIAT eading hift A	E Mode 5 log sheet s per 14000, "Operation nd Daily Surveillance L	s ogs",				
	e. O S	BTAIN upervi tatus	On-Shift Operations sor's approval to chang from Mode 6 to Mode 5.	e				
	0	SOS SI	gnature Date	Time				
4.2.2	When n that t is ten Unit C	otifie he las sioned ontrol	d by Maintenance Depart t Reactor Vessel Head B , LOG Mode 5 entry into Log Book.	ment olt the				
4.2.3	This p 12001- (Mode	rocedu C, "Un 5 to M	re is complete; REFER t it Heatup To Hot Shutdo ode 4).	o wn				
Completed:								
			Signature		Time	7	Dat	e
Reviewed:	-		Signature		Time	7	Dat	e

CEDURE NO.		REVISION	PAGE NO.		
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5.0	REFERENCI	25			
5.1	PROCEDURI	S .			
5.1.1	12001-C	"Unit Heatup To Hot (Mode 5 To Mode 4)	Shutdown		
5.1.2	12006-C	"Unit Cooldown To Co	ld Shutdown"		
5.1.3	13005	"Reactor Coolant Sys	tem Draining"		
5.1.4	13011	"Residual Heat Remov	al System"		
5.1.5	13715	"Component Cooling Water System"			
5.1.6	13719	"Spent Fuel Pool Cooling And Purification System"			
5.1.7	14000	"Operations Shift An Logs"	d Daily Surveillance		
5.1.8	14210	"Containment Buildin Verification-Refueli	g Penetrations ng"		
5.1.9	14225	"Operations Weekly S Logs"	urveillance		
5.1.10	14228	"Operations Monthly Logs"	Surveillance		
5.1.11	14915	"Special Condition S Logs"	urveillance		
5.1.12	24518	"Reactor Coolant Pre Protection II P-403 Operational Test And	ssure (Wide Range) Analog Channel Channel Calibration"		
5.1.13	24519	"Reactor Coolant Pre Protection 7 P-405 A Operational Test And	ssure (Wide Range) nalog Channel Channel Calibration"		

END OF PROCEDURE TEXT

R.1.11	Vogtie Electric Generating Plant	Procedure No. 12006-C
hatter led		Revision No.
3/8/90	Unit <u>COMMON</u> Georgia Power	Page No. of 45
UNIT NO	DATE	1
	UNIT COOLDOWN TO COLD SHUTDOWN	05-78-9
1.0	PURPOSE	7
	This procedure provides instructions for hot standby following reactor trip, maint standby following reactor shutdown, takin from hot standby to cold shutdown. Instr provided for maintaining conditions stabl between.	maintaining aining hot ig the unit fuctions are at points
2.0	PRECAUTIONS AND LIMITATIONS	
2.1	PRECAUTIONS	
2.1.1	If this procedure is terminated prior to the Unit Shift Supervisor (USS) should no for the termination in the comments secti	completion, te the reaso on.
2.1.2	The Reactor Coolant System (RCS) pressure temperature shall be maintained within th region of RCS Pressure Temperature Limits Technical Data Book Tab 3.1).	and e operating (Plant
2.1.3	Do not add positive reactivity by more th controlled method at a time while the rea subcritical.	an one ctor is
2.1.4	Whenever RCS temperature is above 160°F, RCP should be in operation. Preferably P ensure best spray capability.	at least one ump 4 to
2.1.5	Prior to opening any portion of the RCS t atmosphere, the hydrogen concentration in portion must be reduced to less than 5cc/	o the the affecte kg.
2.1.6	The boron concentration in the pressurize be different from the RCS by more than 50 Pressurizer Backup Heaters may be energiz necessary to equalize the boron concentra	r should not ppm. ed as tion.
217 *	The Control Rod Drive Mechanism (CRDM) Co	oling System

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2.1.8	During coold (MSIVs) shou to allow uni (RCS) loops the preferre	down, all Main Steam Isol ald be open or atmospheri form cooldown of all Rea and Steam Generators (SG ad method of heat removal	ation Valves c reliefs balanced ctor Coolant System s). Steam dump is
2.1.9	The Residual should not b steam bubble	Heat Removal (RHR) Pump be isolated from the RCS in the Pressurizer.	Suction Line unless there is a
2.1.10	One Reactor anytime RCS one hour.	Coclant Pump (RCP) shoul temperature is changed b	d be running y more than 10°F in
2.1.11	Spray flow i if the tempe steam space	nto the Pressurizer shou rature difference betwee and the spray fluid exce	ld not be initiated n the Pressurizer eds 125°F.
2.1.12	Before auxil difference b spray fluid (Technical S	iary spray is initiated etween the pressurizer s exceeding 320°F, notify pecification 5.7.1)	with a temperature team space and the the USS.
2.1.13	While in Hot be continuou Feedwater No	Standby, feeding Steam s to minimize thermal st zzle.	Generators shouid resses on the
2.1.14	Vacuum shoul following un to approxima emergency di Rotor.	d be maintained on the M it shutdown until the Tu tely 66% rated speed (12) ctates rapid coastdown o	ain Turbine rbine coasts down 00 rpm) unless an f the Turbine
2.1.15	If Main Turb coastdown pa "Main Turbin	ine coastdown is in prog rameters should be monito e Operation" Sub-subsect	ress, then ored per 13800, ion 4.3.2.
2.1.16	The Main Tur metal casing Bearing lube	bine should be kept on To temperatures have return oil circulation must al	urning Gear until ned to ambient. so be maintained.
2.1.17	During perio the Reactor elevation), scrutinized	ds of operation with the Vessel Flange elevation ongoing work activities and any work activity lin r reducing RHRS capability	RCS level below (194 feet should be closely nited that has the

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VEGP	12006-C	15	3 of 45
2.2	LIMITATION	IS	
2.2.1	The RCS pr psig and 3	essure and temperature 50°F when open to the 1	shall not exceed 425 RHR system.
2.2.2	While in M greater th Technical	odes 3 and 4, shutdown an or equal to the lim Specification 3.1.1.2,	margin shall be it specified in Figure 3.1-1.
2.2.3	While in M or equal t Specificat	ode 5, shutdown margin o the limit specified ion 3.1.1.2, Figure 3.1	shall be greater than in Technical 1-2.
2.2.4	While in M operation least one open. (Te	ode 3, at least two RCS with the Reactor Trip I in operation with the I chnical Specificacions	S loops shall be in Breakers closed and at Reactor Trip Breakers 3.4.1.2)
2.2.5	While in M trains sha loops and/ (Technical	ode 4, at least two RCS 11 be operable and at 1 or RHR trains shall be Specifications 3.4.1.3	5 loops and/or RHR least one of the RCS in operation. 3)
2.2.6	While in M RHR train one additi water leve greater th 3.4.1.4.1)	ode 5 with the RCS loop shall be operable and f onal RHR train operable 1 of at least two steam an 17% wide range. (Te	os filled, at least one in operation and either or the secondary side generators shall be achnical Specification
2.2.7	While in M two RHR tr train shal Valves 120 1208-U4-18 mechanical may be oper control pr operable w times back	ode 5 with the RCS loop ains shall be operable 1 be in operation. Rea 8-U4-175, 1208-U4-176, 3 shall be closed and s stops), except 1208-U4 ned for short periods of ovided the Hi Flux at S ith a setpoint of less ground. (Technical Spe	and at least one RHR and at least one RHR least one least one RHR least
2.2.8	While in M on, at leas protection	odes 4, 5, and 6 with t st one of the following systems shall be opera	the Reactor Vessel Head cold overpressure able:
	a. Two Po the 1	ORVs with lift settings imits established in Fi	which do not exceed gure 1,
	b. Two RJ of 450	HR suction Relief Valve D psig ±37, or	es each with a setpoint
	c. The Ro reliev (Tech	CS depressurized with a ving at least 670 gpm w nical Specification 3.4	an RCS vent capable of vater flow at 470 psig.

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CHOCEDORE RO.		REVISION	PAGE NO.
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2.2.9	While in Mod the required operable. (les 5 and 6, at lea 1 boron injection f Technical Specific	ist one Charging Pump in flow path shall be cation 3.1.2.3)
2.2.10	The primary not exceed 1 differential tests.	to secondary press 600 psid or a seco of 670 psid durin	oure differential shall ondary to primary pressure ng unit operations or leak
2.2.11	The maximum 100°F in any 3.4.9.1)	cooldown of the RG one hour period.	S shall be limited to (Technical Specification
2.2.12	The maximum limited to 2 Specificatio	cooldown of the pr 200°F in any one ho on 3.4.9.2)	ressurizer shall be our period. (Technical
2.2.13	The maximum spray water (Technical S	temperature differ and pressurizer s Specification 3.4.9	rential between auxiliary team space is 625°F. 9.2)
2.2.14	The temperat coolant in t 70°F when th Generator is Specificatio	ture of both the pr the Steam Generator he pressure of eith s greater than 200 on 3.7.2)	rimary and secondary rs shall be greater than her coolant in the Steam psig. (Technical
2.2.15	While in Mod Range Nucles (Technical S	des 3, 4 and 5, bo ar Instrumentation Specifications Tab	th channels of Source shall be operable. le 3.3-1, 6.B)
2.2.16	While in Mod Range Nuclea Recorder NR SHUTDOWN al	des 3, 4, and 5 at ar Instrumentation -45 and the CONTRO arm operable.	least one channel Source should be selected to L ROOM HI FLUX LEVEL AT
2.2.17	While in Mo Reactor Ves the RWST wi 99,404 gall boron conce	des 5 and 6, with sel Flange elevati 11 be operable wit ons (9% of instrum ntration between 2	the RCS level below on (194 feet elevation), h a minimum volume of ent span) of water at a 400 and 2600 ppm.
3.0	INITIAL CON	DITIONS	
3.1	The reactor shutdown or withdrawn o	is shut down eith reactor trip with r inserted.	er following normal Shutdown Rods either
3.2	RCS tempera control of operation o Valves.	ture is stabilized the steam dumps in f the Steam Genera	at no load Tavg under Steam Pressure mode or by tor Atmospheric Relief
3 3	RCS DEPROVE	e is stable at nor	

VEGs 12006-C 15 5 of 45 3.4 At least one RCP is operating. 3.5 S of 45 3.5 Pressurizer level is at approximately or returning to the program level with either the Positive Displacement (PD) Pump or a Centrifugal Charging Pump (CCP) operating to supply normal charging and RCP seal injection flow. 3.6 SG levels are at 45% to 55% NR level with Auxiliary Feedwater (AFW) operating. 3.7 The main Turbine is tripped and either coasting down or on the Turning Gear. 4.0 INSTRUCTIONS 4.0 INSTRUCTIONS 6 This procedure is divided into sections which permit either cooldown or maintaining stable conditions within a specified mode. Section E may be performed concurrently with Sections A, B, C, 1 6 Asterisk (*) steps b .de INNTIAL steps indica s is steps that generate auditional documents. 7 The sections of this procedure are: show in parenthesis. 8 Rot Standby Following Reactor Shutdown or Trip. 9 Cooldown to not less than 350°F. 10 Cooldown to cold Shutdown (less than 200°F). 10 Cooldown to Cold Shutdown (less than 200°F). 10 Socondary Plant Shutdown.	ROCEDURE NO.	and the second	REVISION	annenis kanadan kanadan kana ar analar ana mara	PAGENO			
 At least one RCP is operating. At least one RCP is operating. Pressurizer level is at approximately or returning to the program level with either the Positive Displacement (PD) pump or scentriciul Charging and RCP seal. Chevels et at 52 to 55 RR level with Auxiliars center (PD) approximate charging and RCP seal. The main Turbine is tripped and either coasting down or a the Turning Gear. 10 INTENCENTION Antific and the sections which permit for the four sections of the sections which permit seals conditions at 8.0 cm At least one RCP is operating. Antersk (*) steps of a factor is a fully seal of the sections which permit seals conditions at 8.0 cm At least one of this procedure is divided fully sections at 8.0 cm At sections of this procedure is an additional section is a set of the sections which permit seals conditions at 8.0 cm Antified sections which permit seals conditions at 8.0 cm Antified sections which permit seals are set of the sections at 8.0 cm Antified sections at 8.0 cm At sections at 8.0 cm Antified sections which permit seals are set of the section of the section of the section of the section is a set of the section of the sectio	VEG	12006-C		15	5 of 45			
 3.4 At least one RCP is operating. 3.5 Pressurizer level is at approximately or returning to the program level with either the Positive Displacement (PD) Pump or a Centrifugal Charging Pump (CCP) operating to supply normal charging and RCP seal injection flow. 3.6 SG levels are at 45% to 55% NR level with Auxiliary Feedwater (AFW) operating. 3.7 The main Turbine is tripped and either coasting down or on the Turning Gear. 4.0 <u>INSTRUCTIONS</u> NOTES a. This procedure is divided into sections which permit either cooldown or maintaining stable conditions within a specified mode. Section E may be performed concretently with Sections A, B, C, 7 b. Astorisk (*) steps b ide INTITIAL steps indica is steps that generate auditional documents. c. This procedure is written using Train A designations are shown in parenthesis. The sections of this procedure are: A. Hot Standby Following Reactor Shutdown or Trip. B. Cooldown to not less than 350°F. C. Cooldown to not less than 205°F. D. Cooldown to Cold Shutdown (less than 200°F). E. Secondary Plant Shutdown. 					ne e anna la tran é a alla a su pra a na da dende canas. He a déan de seren de sad generada de seren de seren e			
 3.5 Pressurizer level is at approximately or returning to the program level with either the Positive Displacement (PD) Pump or a Centrifugal Charging and RCP seal injection flow. 3.6 SG levels are at 45% to 55% NR level with Auxiliary Feedwater (AFW) operating. 3.7 The main Turbine is tripped and either coasting down or on the Turning Gear. 4.0 <u>INSTRUCTIONS</u> a. This procedure is divided into sections which permit either cooldown or maintaining stable conditions within a specified mode. Section E may be performed concritently with Sections A, B, C, 7 b. Asterisk (*) steps b ide INTIAL steps indice 3 steps that generate auditional documents. c. This procedure is written using Train A designations are shown in parenthesis. The sections of this procedure are: A. Hot Standby Following Reactor Shutdown or Trip. B. Cooldown to not less than 350°F. C. Cooldown to cold Shutdown (less than 200°F). E. Secondary Plant Shutdown. 	3.4	At least	one RCP is o	perating.				
 3.6 SG levels are at 45% to 55% NR level with Auxiliary Feedwater (AFW) operating. 3.7 The main Turbine is tripped and either coasting down or on the Turning Gear. 4.0 <u>INSTRUCTIONS</u> 8. This procedure is divided into sections which permit either cooldown or maintaining stable conditions within a specified mode. Section E may be performed concwrently with Sections A, B, C,' b. Asterisk (*) steps b ide INITIAL steps indica 5 steps that generate additional documents. c. This procedure is written using Train A designations. Train B component designations are shown in parenthesis. The sections of this procedure are: A. Hot Standby Following Reactor Shutdown or Trip. B. Gooldown to not less than 350°F. C. Cooldown to not less than 205°F. D. Cooldown to Cold Shutdown (less than 200°F). E. Secondary Plant Shutdown. 	3.5	Pressuri the prog (PD) Pum operatin injectio	zer level is ram level wit p or a Centri g to supply n n flow.	et approxim h either th fugal Charg ormal charg	ately or returning to e Fositive Displacement ing Pump (CCP) ing and RCP seal			
 3.7 The main Turbine is tripped and either coasting down or on the Turning Gear. 4.0 <u>INSTRUCTIONS</u> A. This procedure is divided into sections which permit either cooldown or maintaining stable conditions which permit either cooldown or maintaining stable conditions. A. This procedure is vertice is graved and either cooldown or maintaining stable conditions with a section a steps that generate additional documents. C. This procedure is written using Train A designations. Train B component designations are shown in parenthesis. The sections of this procedure are: A. Hot Standby Following Reactor Shutdown or Trip. B. Cooldown to not less than 350°F. C. Cooldown to not less than 205°F. D. Cooldown to Cold Shutdown (less than 200°F). E. Secondary Plant Shutdown. 	3.6	SG levels are at 45% to 55% NR level with Auxiliary Feedwater (AFW) operating.						
 YOTE HATCHICHT IN THE THE THE THE THE THE THE THE THE THE	3.7	The main on the T	Turbine is t urning Gear.	ripped and	either coasting down or			
NOTES 4. This procedure is divided into sections which permit either cooldown or maintaining stable conditions within a specified mode. Section E may be performed concertently with Sections A, B, C, J 5. Asterisk (*) steps b ide INITIAL steps indica is steps that generate additional cocuments. 6. This procedure is written using train A designations are shown in parenthesis. The sections of this procedure are: 4. Mot Standby Following Reactor 5. Cooldown to not less than 350°F. 6. Cooldown to not less than 205°F. 6. Cooldown to cold Shutdown (less than 200°F). 7. Secondary Plant Shutdown.	4.0	INSTRUCT	IONS					
 a. This procedure is divided into sections which permit either cooldown or maintaining stable conditions within a specified mode. Section E may be performed concurrently with Sections A, B, C, 7 b. Asterisk (*) steps bilde INITIAL steps indica is steps that generate additional documents. c. This procedure is written using Train A designations. Train B component designations are shown in parenthesis. The sections of this procedure are: A. Hot Standby Following Reactor Shutdown or Trip. B. Cooldown to not less than 350°F. C. Cooldown to not less than 205°F. D. Cooldown to Cold Shutdown (less than 200°F). E. Secondary Plant Shutdown. 			N	OTES				
 b. Asterisk (*) steps b ide INITIAL steps indica 3 steps that generate auditional documents. c. This procedure is written using Train A designations. Train B component designations are shown in parenthesis. The sections of this procedure are: A. Hot Standby Following Reactor Shutdown or Trip. B. Cooldown to not less than 350°F. C. Cooldown to not less than 205°F. D. Cooldown to Cold Shutdown (less than 200°F). E. Secondary Plant Shutdown. 		a.	This proced into section either cool stable cond specified m may be performed with Section	ure is divi- ns which pe- down or main itions with ode. Section ormed concre ns A, B, C, 7	ded rmit ntaining in a on E rrently			
 c. This procedure is written using Train A designations. Train B component designations are shown in parenthesis. The sections of this procedure are: A. Hot Standby Following Reactor Shutdown or Trip. B. Cooldown to not less than 350°F. C. Cooldown to not less than 205°F. D. Cooldown to cold Shutdown (less than 200°F). E. Secondary Plant Shutdown. 		b.	Asterisk (* INITIAL step steps that p documents.) steps b os indica generate aug	ide 3 ditional			
 The sections of this procedure are: A. Hot Standby Following Reactor Shutdown or Trip. B. Cooldown to not less than 350°F. C. Cooldown to not less than 205°F. D. Cooldown to Cold Shutdown (less than 200°F). E. Secondary Plant Shutdown. 		c.	This procedu Train A des: component de shown in par	are is write Ignations. Signations centhesis.	ten using Train B are			
 A. Hot Standby Following Reactor Shutdown or Trip. B. Cooldown to not less than 350°F. C. Cooldown to not less than 205°F. D. Cooldown to Cold Shutdown (less than 200°F). E. Secondary Plant Shutdown. 		The secti	ons of this p	procedure an	re:			
 B. Cooldown to not less than 350°F. C. Cooldown to not less than 205°F. D. Cooldown to Cold Shutdown (less than 200°F). E. Secondary Plant Shutdown. 		A. Hot Shut	Standby Follo down or Trip	wing Reacto	or			
 C. Cooldown to not less than 205°F. D. Cooldown to Cold Shutdown (less than 200°F). E. Secondary Plant Shutdown. 		B. Cool	down to not 1	ess than 35	50°F.			
 D. Cooldown to Cold Shutdown (less than 200°F). E. Secondary Plant Shutdown. 		C. Cool	down to not 1	ess than 20	05°F.			
E. Secondary Plant Shutdown.		D. Cool than	down to Cold 200°F).	Shutdown (]	less			
		E. Seco	ndary Plant S	hutdown.				

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			na e Calinana e a se a companya na manana e a companya na manana ina a manana na manana manana manana manana m	antine and a second second	n morale de la company de l
UNIT NO.	-	The subscripts of			
SECTIO	NA: H	ot S	tandby Following Reactor	Shutdown	or Trip
A4.1	OPERAT TRIP:	ING	IN HOT STANDBY FOLLOWING	REACTOR S	HUTDOWN
					INITIA
A4.1.1	lf thi a reac follow	s pr tor ing:	ocedure has been entered trip, then perform the	from	
	a. I R	NITI. evie	ATE 10006-C, "Reactor Tri	p	
	b. I S I A	f en I te: 1886 ctua	tering this procedure fro mination, then perform "Recovery From ESF tion",	m	
	c. Mo	ONIT(aram(pera)	DR Main Turbine coastdown sters per 13800, "Main Tu tion" and:	rbine	
	(1		INSURE that the Turning G Notor Control Handswitch In AUTO/PULL-TO-LOCK posi	ear is tion,	-
	(1	2) 1	Then Turbine Rotor reache pesd, VERIFY all Lift Pur Turning Gear Oil Pumps ON Turning Gear engagement.	s zero mps, and	Assessmentation reactions
	d. Lf Pu "A re Ch	app app iuxi) turi ieck)	licable, ENSURE that TDA as been stopped per 1361 lary Feedwater System" an ed to STANDBY per 13610, lst 2,	FW 0, nd	
	e. If 92 Rs Te	not day nge st"	performed in the previous, COMPLETE 14423, "Source NIS Channel Analog Operation (Technical Specification 4.3.1 item 6).	us ce tional	

mente, Locale d'Anno antication de Anna	120	06-0	15	7 of 45
UNIT NO.	-	anternation conse		INITIALS
	f.	When indic COMTR SHUTI perf:	Source Range channels ation stabilize PLACE ROL ROOM HI FLUX LEVEL AT DOWN alarm in operation by orming the following:	
		(1)	NOTIFY I&C and if necessary, RESET the HI FLUX AT SHUTDOWN alarm setpoint per 24635 and 24696, "N.I. System Source Range Channel Calibration",	
		(2)	ENABLE THE HI FLUX AT SHUTDOWN alarm by placing the HIGH FLUX AT SHUTDOWN NORMAL/BLOCK switches to the NORMAL,	
		(3)	VERIFY annunciator SOURCE RNG HI SHUTDOWN FLUX ALARM BLOCKED ALB-10 B01 resets,	
		(4)	SELECT both channels of Source Range indication on Recorder NR-45,	
			ANNOTATE chart to reflect channels selected,	
	g.	CALCU 14005 Calcu	LATE SHUTDOWN MARGIN per , "Shutdown Margin lations",	
	h.	If ne 13009 Contr	cessary, BORATE the RCS per , "CVCS Reactor Makeup ol System",	
	1.	SHUT perfo	DOWN the CVCS BTRS System by rming the following:	
		(1)	PLACE the CVCS BTRS SELECTOR Switch HS-10351 in the OFF position,	
		(2)	CLOSE the BTRS Demineralizer Flow Control HV-0387 to the FULLY CLOSED position,	

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VEGP	1200	6-C	1	1.5		ant of stars ing the second	8 of 45
UNIT NO.	-						INITIAL
	J.	DIRECT hydrogo concen lodine require Specif	Chemistry en, gas ac trations a sample an ed frequen ications T	to sample tivity nd PERFORM alysis per cies of Tec able 4.4-4,	the RCS an RCS the chnical		
Person Co	ntact	ed		Date		Time	-
	k.	MAXIMI flow ra And Vol And Nor	ZE CVCS le ate per 13 lume Contr rma: Opera	tdown purif 006, "Chemi ol System S tion",	ication cal Startup		
				Date	Time		
	1.	If requ of the 13760-0 System	uired, INI Auxiliary C, "Auxili ',	TIATE START Boiler per ary Steam H	UP Sciler		
		NOTIFY	Chemistry	Department			
	m .	At the Panel, Cooling Tank te the set Blowdow Control 1194,	Steam Gen slowly LO Water To mperature points on on tempera llers TIC-	erator Blow WER Steam O The Heater to 200°F b the Steam ture Contro 1191, 1192,	down enerator Drain y adjust: Generato: 1 Valves 1193 and	ing r d	
	n.	STOP be	oth Heater	Drain Pump	5,		en de state de ser de seconde de
	с.	STOP al	1 but one	Condensate	Pump,		-
	р.	REDUCE	in-servic alizer Po ble per 1	e Condensat wdex Vessel 3616. "Cond	e s as lensate		

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UNIT NO.	-				INITIALS
	q.	PLACE System 13615, System antici	the Condensate and F on Long cycle recir "Condensate And Fee s", or if a return to pated, OPEN MFP A &	eedwater c per dwater o power is B BYPASS:	
		UNIT 1	: 1-1305-U4-655		
		UNIT 2	: 2-1305-U4-655		
		or at and VE chemis Steam concur	least one MFP Discha RIFY condensate/feed try is acceptable fo Generators by obtain rence from Chemistry	rge MOV water r feeding ing Department,	
	τ.	NOTIFY placin into p	Chemistry to initia g condensate and fee roper chemical wet 1	te dwatex ayup,	
	8.	If nec Circul	essary, SHUT DOWN al ating Water Pump,	l but one	
	t.	If nec River in the	ess.ry, SHUT DOWN al Makeup Pump and RECO Unit Control Log Bo	l but one RD time ok,	
	u.	ENSURE 1-HV-7	SG Blowdown Isolati 603A(B, C, D) open.	on Valves	
A4.1.2	If N to e dema	lo-Load xcessiv and by p	Tavg annot be maint e steam demand, REDU erforming the follow	sined due CE steam ing:	
	а.	ENSURE Valves	MSR Heating Steam S HS-6015 and HS-6030	upply closed,	
	Ъ.	TRANSF steam per 13	TER the Auxiliary Ste supply to the Auxili 761, "Auxiliary Stea	am System ary Boiler m System",	
	c.	TRANSF supply per 13 System	TER the Turbine Steam to the Auxiliary St 1825, "Turbine Steam a",	Seal eam Supply Seal	
	d.	TRANSF the Au "Conde	TER the SJAE steam su miliary Steam Supply enser Air Ejection Sy	pply to per 13620,	

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UNIT NO.						an der eine einen kennen einen eine	INITIALS
	е.	If Ma for to preve link: Prote 00300 Lifte	ain Ge more t ent ov s TBR ective 6~C, " ed Wir	ner han erh 28, Re Temj e Co	ator is to be shut two days, then to eating relay 360A, 29 and 30, locate lay Panel Bay 4, p porary Jumper And ontrol",	down OPEN d in er	
	£.	If th (1328 de-en then TBS 4 Relay "Temp Contr tripp 386 0 Break	he Gen B-P5-G OPEN A and Y Pane Porary rol". Ding Lo Slo whiters,	erat RC) ed i lin 5 lo Ju Thi ocko ich	tor Regulator Pane is to be for maintenance, ts TBR 56 and 57 a potential of the second second ty 4, per 00306-C, aper and Lifted Wi as will prevent but Relays 386 G9 trip Generator Ou	ind ve re and itput	
	g.	At th Cabir Trans 13800 Sub-s	ne Main nets, c sformen), "Mai subsect	n Tr de-e r Oi in T	ansformer Control nergize the 1 Pumps and Fans 'urbine Operation" 4.3.1.	per	
A4.1.3	At th MFPT and t appli	trip aggin cable	's dis circus ug the unit:	fol	tion, DISABLE the to AFWAS by remo lowing fuses on t	ving he	
	UNIT	1:	Train	Α -	Aux Relay Fanel 1NCPAR2, Fuse FU	- 4	NAME AND DESCRIPTION OF A DESCRIPTION
			Train	в -	Aux Relay Panel 1NCPAR4, Fuse FU	-1	IV
	UNIT	2 :	Train	A -	Aux Relay Panel 2NCPAR2, Fuse FU	4	īv
			Train	в -	Aux Relay Panel 2NCPAR4, Fuse FU	-1	TV

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OCEDURE VO.		REVISION		PAGE NO.	THE CONTRACTORY NUMBER OF THE OWNER WITHOUT
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			And a second	n manafan in der soner ander an	
UNIT NO					INITIALS
					the second second second

END OF SECTION A

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		MEVISION	PAGENO	
VEGP	12006-C	15	Const. Second and second and an and a second and and	12 of 4
INTT NO				
UNIT NO.	SECTION B	Cooldown to not 1		LA
	DECLICIT D.	NOTE	ess than J.	50 F
		This section directs of	coldarm	
		to 375°F or any point without crossing the b for Mode 4 at 350°F.	between oundary	
B4.1	PREPARATIO	ON FOR UNIT COOLDOWN		
				INITIAL
B4.1.1	If require then INITI	ed to cooldown secondar LATE Section E of this	y systems, procedure.	
B4.1.2	If Condens then INITI the MSR's Operation"	er vacuum is being mai ATE placing a steam bl per 13800, "Main Turbi '.	ntained, anket on ne	
B4.1.3	INITIATE p equalizati Backup Hea	ressurizer and RCS bor on by energizing Press ters.	on urizer	
B4.1.4	MAXIMIZE C	VCS letdown purificati	on	
	LIUWIALE.	date/time		Philippine Control Control of the same
B4.1.5	INITIATE B shutdown b "CVCS Reac	orating the RC3 to the oron concentration per tor Makeup Control Sys	cold 13009, tem".	
	If applica Acid Injec Inservice	ble, PERFORM 14835, "B tion Check Valve Cold Test" during the borat	oric Shutdown ion.	
B4.1.6	DIRECT Che Pressurize	mistry to sample the R r boron concentration.	CS and	******
B4.1.7	If withdra Banks to t	wn, INSERT all Shutdow he fully inserted posi	n tíon.	
84 1 8	OPEN the R	eactor Trip breekers		

		P	AGE NO.
VEGF	12006-C	15	13 of 45
UNIT NO.			INITIAL
B4.1.9	If not curr INITIATE RC by performi	ently in progress, S gaseous activity degas ng the following:	
	a. ENSURE Steam operat the PR Valves open,	that the Pressurizer Space Sample line is in ion by verifying that ZR STM SAMPLE IRC/ORC HV-3513/HV-3514 are	
	b. NOTIFY pressu flow r	Chemistry to adjust the rizer steam space sample ate to maximum,	
	c. While a gas, Di VCT gas Gaseous to appo HIC-109 Hydroge	maintaining hydrogen cover EGAS the RCS by raising s purge flow rate to the s Waste Processing System roximately 1.2 scfm using 94, as limited by the en Recombiners.	
B4.1.10	When notifie RCS gaseous to an accept cover gas to Hydrogen deg Control And	ed by Chemistry that the activity has been reduced table level, TRANSFER VCT Nitrogen and INITIATE RCS gas per 13007, "VCT Gas RCS Chemical Addition".	
		NOTE	
	Preco	rior to opening the RCS to ontainment the hydrogen oncentration shall be less han 5 cc/kg.	
B4.1.11	START both (Units using FAN HS-2620)	Containment Pre-access Filte CTB PREACCESS FLTR UNIT-1/2 (2621. date/time	er 2
B4.1.12	If it is pla Shutdown, ar previous the "AFW Check V	inned to cool down to Cold ad if not performed in the see months, COMPLETE 14748, Valve Shutdown Inservice	

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		REVISION	PAGE NO.
VEGP	12006-C	15	14 of 4
UNIT NO.			TNTTTAT
B4.2	RCS COOLDO	WN TO 375°F	ANA A ARA
B4.2.1 [*]	COMMENCE R temperatur intervals computer. 4.4.9.1, 4	CS/Pressurizer pressure and e trending at 30 minute using Data Sheet 1 and ERF (Technical Specification .4.9.2)	
	Data taking suspended cooldown is to exceed of	g and plotting may be during holds in the f the duration is expected one hour.	
		CAUTION	
		To reduce thermal stratific in the Pressurizer Surge Li maintain the Delta-T betwee the RCS and the Pressurizer Steam Space as low as pract The Delta-T of 320°F should be exceeded.	ation ne n ical. not
		NOTE	
) F J S	It is recommended that the RCS temperature be maintain 100°F ±25°F below Pressuriz steam space temperature. (See Figure 1.)	ed er
B4.2.2	COMMENCE the psig at a r approximate the followi	ne cooldown to 375°F and 54 recommended rate of aly 50°F per hour by performing:	0 ming
	a. REDUCE to two Pump C	the number of operating Roper 13003, "Reactor Coolar Operation",	CPs nt
	Pumps	4 and 1 are the preferred ag pumps,	
	b. INITIA depres the Pr	TE Pressurizer cooldown and surization by <u>slowly</u> openin essurizer Spray Valves,	d ng
	If nec	essary, selectively DE-ENE	RGIZE

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UNIT NO.

INITIALS

· CAUTION

- RCS temperature and pressure shall be maintained within the acceptable operating region of Figure 1.
- c. <u>Slowly</u> ADJUST the Steam Dump Controller setpoint or if applicable the Atmospheric Relief Valves to initiate RCS cooldown.

B4.2.3 At approximately 2185 psig, OBSERVE PRZR PORV BLOCK VALVES HV-8000A and HV-8000B auto close.

NOTE

Depending on the rate of RCS cooldown and depressurization, Step B4.2.5 may occur before Step B6.2.4.

- B4.2.4 At approximately 550°F RCS temperature PERFORM the following:
 - VERIFY status light LO LO TAVG TRAIN A STEAM DUMP INTL P12 illuminated,
 - b. BYPASS the LO LO TAVG interlock by momentarily placing the Train A and B Steam Dump Interlock Selector Switches to the BYPASS INTERLOCK position,

If operating on Steam Dumps, then VERIFY Steam Dump Cooldown Valves PV-0507A,B and C are open by observing ZLB-2 on QMCB.

PROCEDUPE NO.		REVISION	IPAGE NO.
YEGP	12006-C	15	16 of 45
UNIT NO.			INITIALS
		CAUTION	
	P PS	pressurize above Pll and Soressure is below 585 psig Dafety Injection and Steam ine Isolation will occur.	э ,
B4.2.5	At approxim Pressurizer Safety Inje Steam Line the followi	ately 1970 psig, manually Pressure and Steam Line Line ction and Steam Line Press Isolation signals by perfo ng:	BLOCK Pressure sure prming
	a. It is refuel "Remot Switch Survei and 3B subste	is planned to cool down fo ing, then PERFORM 14710, e Shutdown Panel Transfer And Control Circuit 18 Mo llance Test" Data Sheets 3 in lieu of the following ps,	or onth BA
	b. VERIFY PRZR L illumi	Block Permissive Status 1 O PRESS SI BLOCK PERM P11 nates,	ight
	c. BLOCK Safety PRZR P handsw	the Low Pressurizer Pressu Injection signal using RESS SI BLOCK/RESET A and itches HS-40012 and 40013,	B
	d. OBSERVI SI BLO	E Status Lights PRZR TRAIN CKED illuminated,	A/B
	e. BLOCK Safety STM PRI handsw:	the Low Steam Line Fressur Injection signal using LO ESS SI/SLI BLOCK RESET itches HS-40068 and 40069,	e W
	f. OBSERVI TRAIN	E Status Lights STMLINE IS A/B SI BLOCKED illuminated	o
B4.2.6	CHECK that I 20% and 40%	Pressurizer level is betwe	en
B4.2.7	As RCS press Letdown Orig ADJUST PIC-1 desired leto	sure lowers, OPEN addition fice Isolation Valves and 131 setpoint to maintain down flowrate.	al
B4.2.8	During RCS of RCP seal inj and 13 gpm b Header Flow	depressurization, MAINTAIN Jection flow rates between by adjusting the Charging Controller HC-0182.	all 8

PROCEDURE NO.		REVISION	of the second
VEGP	12006-C	15	17 of 4
UNIT NO.	-		INITIAL
B4.2.9	At approxima Accumulators	ately 950 psig, ISOLATE ECCS s by performing the following:	
	a. REMOVE Accumu 480V Mo unit:	TAG, UNLOCK and CLOSE the lator Discharge Isolation Valve CC Breakers on the applicable	
	UNIT 1		
	ACCUM-	1 1ABE-19	
	ACCUM-	2 1BBC-19	and advertising an and a strength of the same strength of
	ACCUM-	3 1ABC-19	
	ACCUM-	4 1BBE-19	Alaman Productive Second S
	UNIT 2		The second
	ACCUM-	1 2ABE-19	
	ACCUM-	2 2BBC-19	
	ACCUM-	3 2ABC-19	4.4 (B): Similar controls, documents
	ACCUM-	4 2BBE-19	
	b. CLOSE	the Accumulator Isolation Valves	
	ACCUM-1	L HV-8808A.	
	ACCUM-2	2 HV-8808B.	
	ACCUM-	3 HV-8808C.	WARDERSON OF STREET, ST
•	ACCUM-4	4 HV-8808D.	Manimum Sectorem of April and Can
	c. OPEN, I Dischar Breaker	LOCK and TAG the Accumulator rge Isolation V lves 480V MCC rs on the applicable unit,	
	UNIT 1		
	ACCUM-1	L 1ABE-19	
			and provide the second s
			IV
	ACCUM-2	2 1BBC-19	
			TV
	ACCUM-3	3 1ABC-19	
			1A
	ACCUM-4	4 1BBE-19	4 - 14 million (1997)

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UNIT NO.			TNTTTAT
	UNIT 2 ACCUM-1	2ABE-19	AN A A ACTUA
	ACCUM-2	2BBC-19	ĬV
	ACCUM-3	2ABC-19	IV
	100000	1000 10	īv
	ACCUM-4	2886-19	IV
	d. OPEN and for the	d TAG MCC Relay K2 Links above MCC breakers.	
B4.2.10	When steam pr than 550 psig the Steam Ger by the runnin Section E4.2	ressure falls too less g, at the USS's discretion nerators may be supplied ng Condensate Pump per of this procedure.	
84.2.11	Either OPERA to maintain H parameter val Section C to 12002-C, "Un Temperature heatup.	TE unit systems as necessary RCS within the following lues or PROCEED to either continue the cooldown or it Heatup to Normal Operating and Pressure" to commence a	
	RCS temperatu RCS pressure Pressurizer	are 375°F ±10°F 540 psig ±25 psig level at program level	
		END OF SECTION B	

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and the lattice of th	NATIONAL MILLION CONTRACTOR AND AND ADDRESS OF ADDRESS AND ADDRESS ADDRESS ADDRESS ADDRESS ADDRESS ADDRESS ADDR	NAME AND ADDRESS OF A DESCRIPTION OF A D	

SECTION C: Cooldown to not less than 205°F

NOTE

This section directs cooldown to 225°F or any point between without crossing the boundary for Mode 5.

C4.1

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PREPARATION FOR CONTINUING UNIT COOLDOWN.

INITIALS

C4.1.1 If required to cooldown secondary systems and break condenser vacuum, then INITIATE SECTION E of this procedure.

CAUTION

Maintain pressurizer cold calibration level greater than 171.

C4.1.2 If it is planned to cool down to cold shutdown, then ALLOW pressurizer level to rise to approximately 65% during the cooldown but not greater than 80% cold calibrate.

CAUTION

To reduce thermal stratification in the Pressurizer Sv.ge Line maintain the Delta-T between the RCS and the Pressurizer Steam Space as low as practical. The Delta-T of 320°F should not be exceeded.

C4.1.3 COMMENCE RCS/Pressurizer pressure and temperature trending at 30 minutes intervals using Data Sheet 1 and ERF computer. (Technical Specification 4.4.9.1, 4.4.9.2)

> Plotting may be suspended during holds in the cooldown if the duration is expected to exceed one hour.

		REVISION	PAGE NO.	ann all is and in the second second second second
VEGP	12006-C	15		20 of 4
UNIT NO.				
C4 2	PCS COOLDO	N.B. TO 22500		INITIAL
	KUS COOLDO	JWN 10,225 F.		
		NOTE		
		It is recommended that t RCS temperature be maint 100°F ±25°F below Press steam space temperature. (See Figure 1.)	he ained rizer	
C4.2.1	COMMENCE t psig at a 50°F per h	the cooldown to 225°F and recommended rate of appr your by performing the fo	250 oximately llowing:	
	a. CONTI depre the P	NUE the pressurizer cool ssurization by <u>slowly</u> op ressurizer Spray Valves,	down and ening	
	If ne Press placi PULL~	cessary, selectively DE- urizer Backup Heaters by ng Control Switches to TO-LOCK,	ENERGIZE	
		CAUTION		
		RCS temperature and press shall be maintained with the acceptable operating of Figure 1.	sure in region	
	b. Slow1 Contr the A initi	y ADJUST the Steam Dump oller Setpoint or if app tmospheric Relief Valves ate RCS cooldown.	licable to	
C4.2.2	If it is p refueling, 350°F, REQ Engineerin have been Vessel Sei	lanned to cool down for then prior to reaching UEST confirmation from g/Maintenance that action taken to preclude Reactor smic Tie Rod Binding.	ns	

VEGP	12006	-C		15		rade no.	21 05
TEGT				1.3			21 01
UNIT NO.							INITI
C4.2.4	Prior Overp: operat	to rea ressure tion by	aching 350 e Protecti y performi	°F, PLACE on System ng the fo	the Constant	in in	
	ā.	If not three "PORV Test",	performed months, PE Cold Shutd	l in the p RFORM 148 lown Inser	revious 160, vice	1	
	b.	ARM the the PR OVERPR HS-800 positi	e A and B ZR PORV BL ESSURE CNT OG and 800 on,	COPS by p OCK VLV (L handswi OH to the	lacing COLD Ltches ARM		
	с.	VERIFY alarme	the follo d upon art	wing annu annu annu annu annu coms	inciator	rs	
		A COLD FULL O	OP ACTU V PEN (ALB12	7LV HV-80(2 E06),	OOA NOT		
		B COLD FULL O	OP ACTU V PEN (ALB12	/LV HV-800 2 F06),	OB NOT		
	d.	ENSURE 1-PV-4 handsw	PRZR PORV 56A are cl itches in	V- PV-455A Losed and AUTO,	A and the		
	e.	ENSURE Valves	OPEN PRZI HV-8000A	and 8000	ОСК В,		
				NOTE			
		S S 4	tep f sat: pecificat: .4.9.3.1.	isfies Te ion surve	chnical illance		
	f.	VERIFY reset:	the follo	owing ann	unciato	rs	
		A COLD FULL O	OP ACTU PEN (ALB1	VLV HV-80 2 E06),	00A NOT		
		B COLD FULL C	OP ACTU PEN (ALB1	VLV HV-80 2 F06).	00B NOT		Second - Digeneration
C4.2.5	At 35 Mode	0°F, L 4 in t	OG time a the Unit C	nd date o ontrol Lo	f entry g Book.	into	
				-	date/t	ime	

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UNIT NO.					INITIALS
C4.2.6	Within 4 h prior to r folloging:	ours after en eaching 325°F	tering Mode PERFORM the	4 and	
	a. RACK Injec appli (Tech	OUT and TAG b tion Pump Bre cable unit, nical Specifi	oth safety akers on the cation 4.5.3	.2)	
	UNIT	1: SI PMP-A	1AA02-16		
		SI PMP-B	1BA03-17		
					TV
	UNIT	2: SI PMP-A	2AA02-16		
					<u></u>
		SI PMP-B	28403-17		
					IA-

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UNIT NO.		Minimum and		INITIAL
			NOTE	and the second second second second
		AF th Va ac fi re	WAS should be defeated to e SG Blowdown Valves, Sam lves and MDAFW Pump Disch lves to accommodate MFP tivities and/or SG draini lling operations without sulting in impacting thos tivities.	ple arge ng/ e
	Ъ.	At the TAG the applica	USS's discretion, REMOVE following fuses on the ble unit:	and
		UNIT 1:	Train A - Aux Relay Pa 1ACPAR6, Fus	nel e FU-2
				IV
			Train B - Aux Relay Pa 1BCPAR7, Fus	nel e FU-6
				- <u>1</u> V
		UNIT 2:	Train A - Aux Relay Par 2ACPAR6, Fus	nel e FU-2
				IV
			Train B - Aux Relay Par 2BCPAR7, Fus	nel e FU-6
				IV
	c.	PLACE s in PULL	andby MDAFW Pumps handsw: -TO-LOCK,	itch
	d.	If the utilized	TDAFW Pump is not being 1, CLOSE HV-5122, 5125, 51	127

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UNIT NO.			INITIALS
C4.2.7	When the RC psig, and R 340°F, PLAC operation p Removal Sys	S pressure is less then in the second	365 in in
	a. OPERAT HV-060 FV-061 temper flow a 3000 g	E RHR HX Outlet Valves 6(0607) and Bypass Valves 8(0619) to control RCS ature as necessary and RH t a minimum total flow of pm,	s IR E
	b. If app "ECCS Inserv	licable, PERFORM 14896, Check Valve Cold Shutdown ice Test",	*
	c. ENSURE survei shift And Da	RHR Suction Isolation llance is initiated each per 14000, "Shift ily Surveillance Logs".	
		CAUTION	
	W C T s S S	hile in Mode 5 with the R oolant Loops filled, with rain inoperable, the seco ide water level of at lea team Generators shall be reater than 171 WR.	leactor 1 RHR ondary ist two
C4.2.8	If desired, RCPs to one Pump Operation	REDUCE the number of ope per 13003, "Reactor Cool ion".	ant
	Pump 4 is the ensure best	he preferred running pump spray capability.	to
C4.2.9	When SG pres INITIATE al per 13601, Steam System set at 2 to	ssure falls to 25 psig igning Nitrogen to the SG "Steam Generator And Main m Operation" with regulat 5 psig.	ors
C4.2.10	If it is int on the RAT's NOTIFY Mains towards back Transformer And Unit Aus To The 13.88	tended to perform mainten s during the outage, then cenance to initiate work and UAT's per 13417, "Ma xiliary Transformer Backf V And 4160V Non-1E Busse	in eed s'.

PROCEDURE NO.	An and the specific and an an appropriate the state of the state	REVISIO	N	PAGEN	0.
VEGP	12006-C		15		25 of 45
C4.2.11	Either OPE to maintai parameter Section D 12001-C, "	RATE un n RCS & values to cont Unit He	it systems as ithin the fol or PROCEED to inue the cool atup to Hot S	necessary lowing either down or hutdown" to	INITIALS
		neucup	CAUTION		
		Ensure differe maintai 200 psi	running RCP s ntial pressur ned greater t d.	eal e is han	
	RCS temper RCS pressu	ature re	225 F ±10° 250 psig ±	F 25 psig	
		END	OF SECTION C		

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VEGP	12006-C	15		26 of 4
UNIT NO.				
	SECTION D:	Cooldown to Cold S (less than 200°F).	Shutdown	
		NOTE		
		This section directs co to Mode 5 and maintains temperature between 130 80°F.	ooldown F and	
D4.1	PREPARATIO	N FOR CONTINUING UNIT C	COOLDOWN	
				INITIALS
D4.1.1	If require and break Section E	d to cool down secondar condenser vacuum, then of this procedure.	y systems INITIATE	
		CAUTION		
		To reduce thermal strat in the Pressurizer Surg maintain the Delta-T be the RCS and the Pressur Steam Space as low as p The Delta-T of 320°F sh be exceeded.	ification e Line tween izer ractical. ould not	
D4.1.2	COMMENCE R temperature intervals of Computer. 4.4.9.1, 4	CS/Pressurizer pressure trending at 30 minute using Data Sheet 1 and (Technical Specificati .4.9.2)	and ERF on	
	Plotting ma in the cool expected to	ay be suspended during l ldown if the duration i b exceed one hour.	holds s	
D4.1.3	ENSURE RHR flow rate g	letdown is in operation greater than or equal to	n with o 75 gpm.	-
D4.1.4	If not pres	viously performed, RAIS	E	

an annual sources			
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INTE NO			
D4.2	RCS COOLDOW	N TO BETWEEN 130°F and 80°F	INITIALS
D4.2.1 *	COMMENCE th of approxim performing	e cooldown at a recommended rately 50°F per hour by the following:	ate
	a. Slowly HV-060 temper	ADJUST the RHR Outlet Valves 6(0607) to reduce RCS ature,	
		CAUTION	
	E d m 2	nsure running RCP seal ifferential pressure is sintained greater than 00 psid.	
	b. MAINTA psig, Pressu	IN Pressurizer pressure at 250 ±25 psig, by selective use of rizer Backup Heaters.)
D4.2.2	At 200°F, L into Mode 5	OG time and date of entry in the Unit Control Log Book.	
		time/date	
D4.2.3	RACK OUT an pump breake	d TAG the Containment Spray rs on the applicable unit.	
	UNIT 1: C	S PMP-A 1AA02-14	
	C	S PMP-B 1BA03-14	5 Million Street Street Street Street
	UNIT 2: C	S PMP-A 2AA02-14	No. On Obvious of Constant Academic
	C	S PMP-B 2BA03-14	-
D4.2.4	As directed Containment in operation Purge System	by the USS, PLACE the Pre-access Purge System n per 13125, "Containment m".	
D4.2.5	To facilitat egress, duri Maintenance Personnel Lo	te personnel ingress and ing cold shutdown, NOTIFY to bypass the Containment ock Interlock System.	
	If desired thatch Missil this time.	the Containment Equipment le Shield may be moved at	
D4.2.6	NOTIFY Work	Planning Group to schedule	

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UNIT NO.			INITIAL
D4.2.7	If it is i below 172 REQUEST En RHR Suction Interlock And Remova Temporary And The De Removal Su Interlock"	ntended to drain the RCS to pressurizer level, then gineering to defeat the n Valves Autoclosure per 54840, "Installation l Instructions For The RCS Level Indication Tygon Tube feat Of The Residual Heat ction Valve Auto Closure	
D4.2.8	When the R 120°F to 1 to take th the Pressu following:	CS temperature is between 80°F and if it is intended e RCS solid and cooldown rizer, then PERFORM the	
	a. ENERG and m 250 p Press	IZE all Pressurizer Heaters aintain RCS pressure at sig ±25 psig by use of urizer Spray Valves,	
	b. ENSUR are in	E all CVCS Letdown Orifices n operation,	
		CAUTION	
		Expect rapid Pressurizer pressure rise with charging flow greater than letdown flow at the point of going solid. Be prepared to reduce charging flow or raise letdown flow to prevent extreme pressure fluctuations.	
		NOTE	
		During the filling process, monitor Pressurizer liquid and steam space temperature. If liquid temperature lowers toward RCS temperature, then the Pressurizer fill rate should be reduced.	
	c. RAISE	Pressurizer level by raising	

charging flow rate and/or lowering RHR letdown flow rate at a maximum filling rate of 30 gpm,

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UNIT NO.					INITIALS
	d.	When indic if PI flow	the pressurizer is so ated by rising RCS pr C-101 is in AUTO risi rate, then PERFORM th	olid as ressure or ng letdown ne following:	
		(1)	BALANCE charging and flow rates using HV-0 PIC-131 to maintain R at 250 psig ±25 psig,	letdown 128 and/or CS pressure	4. Annuarity series and a state of the series of the ser
			NOTE		
			Charging flow may rem than letdown flow as coolant contraction d cooldown.	a. teater a. it of luring the	
		(2)	Charging/RHR letdown should be adjusted so letdown purification maintained greater th to 75 gpm,	flow rate that RHR flow is an or equal	
	e.	CONTI selec Heate spray	NUE the Pressurizer c tively de-energizing rs while maintaining	ooldown by Pressurizer Pressurizer	
D4.2.9	When 140°	the R F. PER	CS temperature is les FORM the following:	s than	
	а.	If wi Banks	thdrawn, INSERT all S to the fully inserte	hutdown d position,	
	ь.	OPEN	the Reactor Trip Brea	kers,	
	с.	STOP the f	the CRDM Cooling Fans ollowing handswitches	using	
		CRDM CRDM CRDM CRDM	UNIT - FAN 1 HS-122 UNIT - FAN 2 HS-122 UNIT - FAN 3 HS-122 UNIT - FAN 4 HS-122	73A, 74A, 75A, 76A.	-
	d.	If it shutd then as sp per 1. Steam	is intended to remain own for greater than PLACE the SG's in wet enified by Chemistry Bool, "Steam Generato System Operation".	n in cold 4 days, layup Department r and Main	

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VEGP	12006-C	15		30 of 4
UNIT NO.				INITIAL
		NOTE		
		The RCP(s) shall be re one or more hours after the desired RCS temper plateau to enhance SG temperature equalizat:	un for er reaching rature and RCS ion.	1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -
D4.2.10	When RCS t the remain 13003, "Re	emperature is less that ing RCPs may be stoppe actor Coolant Fump Ope	an 110°F, ed per eration".	
D4.2.11	CONTINUE to opening Pr Valve HV-8	the Pressurizer cooldow essurizer Auxiliary Sp 145.	wn by pray	
	a. INITI surve Condi (Tech	ATE AUX SPRAY/PRZR DEI illance per 14915, "Sp tions Surveillance Log nical Specification 4.	LTA-T pecial gs", .4.9.2),	
	b. If pr water LOG t the U Techn per 8 Trans	essurizer auxiliary sp delta-T exceeds 320°F he spray valve operatinit Control Log and NC ical Support to log th 3101-C, "Component Cyc ient Limits",	f, then lon in DTIFY he cycle lic or	
	c. CLOSE Valve	the open Charging Iso HV-8145 or HV-8147,	lation	AMERICAN IN AN ADDRESS OF A
	d. Contin Press until tempe	nue CHARGING through t urizer auxiliary spray pressurizer steam spa rature is less than 19	he line ce 0°F.	
D4.2.12	MAINTAIN RO and 80°F un HV-0606(060	CS temperature between sing RHR HX Outlet Val 07).	130°F ves	
	NOTIFY Tech unit cooldo Cyclic or T	nnical Support to log own per 83101-C, "Comp Fransient Limits".	the onent	

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UNIT NO.				INITIALS
		CAUTION		
	1	Ensure all RCP's	are shutdown.	
D4.2.13	If it is de then FERFOR	esired to depress RM the following:	urize the RCS,	
	a. INITIA atmosp on PI- letdow	ATE Lowering RCS pheric (50 psig a 408, 418, 428 or m pressure contro	pressure to s indicated 438) using ol PIC-131,	
	b. When R (150 p 418, 4 Leakof B, C,	CS pressure react sig as indicated 28, 438), CLOSE of Isolation valve D,	nes 100 psig on PI-408, all RCP Seal as HV-8141A,	
	c. ENSURE mainta	PRT nitrogen pre ined greater than	essure is n 0.5 psig.	
		NOTE		
	S V 1 d d	I Pmp Cold Leg Is alves are closed nadvertent drains he RCS while the epressurized and rained.	to preclude ng of RWST to RCS is partially	
D4.2.14	ISOLATE the performing	Safety Injection the following:	Cold legs by	
	a. CLOSE HV-882	SI PMP-A TO COLD 1A,	LEG ISO VLV	
	b. CLOSE HV-882	SI PMP-B TO COLD 1B,	LEG ISO VLV	
	c. OPEN an Leg Is on the	nd TAG the follow olation Valves MC applicable unit:	ing SI Cold C breakers	
	UNIT 1	: 1-HV-8821A	1ABD-15	References and a second se
		1-HV-8821B	1BBD-15	
	UNIT 2	: 2-HV-8821A	2ABD-15	
		2-HV-8821B	2BBD-15	
	d. OPEN at for the	nd TAG MCC Relay a above MCC break	K2 Links ers.	

		60° 66' 6.0			وشهروهم	ALC: VALUE
	A	Maria - Lake	1.00			
ल का त	AC 81	C31.18		141	×	
		60 B C			an	

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CAUTION

Prior to opening any portion of the RCS to the atmosphere, the hydrogen concentration in the affected portion must be reduced to less than 5cc/kg.

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D4.2.15

When required, INITIATE RCS draining by performing the following:

- a If it is intended to drain down to perform maintenance on Reactor Head, SG's or RCP seals, then the following RCS level controls shall be placed into effect:
 - (1) DETERMINE closure status of Containment Equipment Hatch and ENSURE hatch is capable of being closed within 57 minutes or ENSURE hatch is closed prior to reducing RCS level below three feet below the Reactor Vessel Flange (191 ft. el.).
 - (2) A review of all Containment penetrations addressed in 14210, "Containment Building Penetrations - Refueling" should be accomplished to determine those which have been opened by manual means and an info LCO generated for those identified.
 - (3) If SG Nozzle Dams are to be installed and no cold leg opening is to be established, a vent path is required from the Reactor Vessel upper plenum.

This vent path can be satisfied by:

- (a) Removing a pressurizer manway, or
- (b) Removing a Steam Generator manway on a hot leg that will not be dammed, or
- (c) Removing three pressurizer code safeties.

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		REVISION	PAGE NO.
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UNIT NO.			INITIALS
•	(4)	If SG Nozzle Dams are to h inscalled and a cold leg opening is to be establish a vent path is required for the Reactor Vessel Upper Flenum by removing an SG manway on an HL that will be dammed.	hed, rom
	(5)	If it is intended to opera at one foot above mid-noz: level, the preferred RHR configuration is one train operating with a flow of 3 gpm,	ate zle 3000
	(6)	If it is intended to operabelow 191 ft. el., then:	ate
		(a) A minimum of two inco thermocouples shall b available during peri where the Reactor Hea installed,	ore be lods ad is
		(b) REQUEST I&C reset the designated ERF incore thermocouples alarm setpoint to alarm at above desired tempera per 00410-C, "Compute Software Control".	10°F ature ar
	(7)	I&C should be notified to install temporary remote R level monitoring in the Control Room,	
	(8)	Tygon tube watch is requir any time the RCS level is being changed while the RC level is below 17% (approximately 207 feet elevation) pressurizer lev	red 25 vel,
	(9)	Periodic comparison checks should be made every 4 hou between the Control Room Temporary RCS Level Monito and the Tygon tube,	9 175 075
	(10)	The Control Room Monitors should agree within 7 perc of scale with the Tygon L	ent be.

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UNIT NO.				INI	TIA	LS
	(11)	Two out of three Level Manit must agree before draining R below the top of the how leg (188 feet 3 inches),	cors RCS			
	(12)	If neither Control Room RCS Level Monitor is available, then a continuous Tygon tube watch should be established while RCS level is below 17% pressurizer level,				
	(13)	While operating with SG Nozz Dams installed, ENSURE one Safety Injection Pump is cap of being racked in and opera in the hot leg injection mod needed,	le able ted le if			
	(*.4)	While level is in the region the hot legs, TREND RHR Pump parameters on ERF for early detection of possible RHR Pum degradation due to vortexing	of mp			
	(15)	Minimum RCS level is one foor above mid-nozzle (188 feet) inches elevation) except for Steam Generator burping durin Initial drain down. For effective SG tube draining, H level should be lowered to 187 reet 6 inches. Upon completion of SG burping, RAI RCS level to 158 feet - 0 incomplet and MAINTAIN at this level thereafter,	t or ng RCS ISE ches			
	(16)	minimum of 4 Containment cooling Units will be operable and capable of being started required while RCS level is	le if			

PROCEDURE NO.		REVISION	and dispersions enderstar restructure containing and		-		-	-
VEGP	12006-C		15		35	of	45	1
UNET NO.	Automotive and a second of the second		NOTE		INI	TIA	LS	
		Dose Equ be below Co-58 be to openi containm	ivalent Iodine (0.1 uCi/gm, Xe- low 0.05 uCi/gm ng the RCS to the ent atmosphere.	should -133 and prior he				
	b. OBTAIN RCS cl drain	Chemis hemistry ing the l	try concurrence is appropriate RCS.	that for				
	c. INITIA	ATE drain tor Cool	ning the RC par ant System Draw	r 13005. ning".	5			
D4.2.16	If it is in than 25% co then prior potential o the follows	ntended old calin to reach dilution ing:	brate pressurize ning 25% ISOLATE flow paths by p	to less er level, performing				
	a. CLOSE, valves	LOCK and on the	nd TAG the follo applicable unit	owing t:				
•	(1) t	INIT 1:	CVCS ISOLATION PMW TO BA BLEN 1-1208-U4-175	9 9D,				
			CVCS ISOLATION RMW TO CVCS, 1-1208-U4-177	ł				
	(2) U	NIT 2:	CVCS ISOLATION RMW TO CVCS, 2-1208-U4-177	1				
			CVCS ISOLATION RMW TO BA BLEN 2-1208-U4-175	1 ID,	eter menor			
	b. ENSURE follow unit:	CLOSED,	LOCKED and TAG wes on the appli	GED the cable	at pairies	Halling Connects		
	(1) U	NIT 1:	CVCS OUTLET CH MIXING TK, 1-1208-U4-181	IEM				
			CVCS SUPPLY RM TO CHEM MIXING 1-1208-U4-176	W TK,				
			CVCS FLUSH RMW TO TRN A EMERG BORATION, 1-1208-UA-183					
			RMWST TO BTRS 1-1208-U6-226	ISO,			-	

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UNIT NO.	VINIO AL VINIO DE LA COLONIA					INITIALS
	. (ע (2	NIT 2:-	CVCS SUPPLY RM TO CHEM MIXING 2-1208-U4-176	W TK,	
				CVCS OUTLET CH MIXING TK, 2-1208-U4-181	EM	
				CVCS FLUSH RMW TO TRN A EMERG BC°ATION, 2-1208-U4-183		
				RMWST TO BTRS 2-1208-U6-226	ISO,	
	c. W	hen ne erform	cessary ing the	, makeup to the following:	VCT by	
	(l) OP Va	EN RWST	TO CCP A & B S -0112D and LV-C	UCTION 112E,	
	(2) CL LV	OSE VCT -01128	OUTLET ISOLATI and LV-0112C,	ONS,	
	(3) EN Ta VC	SURE Le nk Valv T posit	tdown to VCT or e LV-0112A is i ion,	Hold-up n the	
	(4) Wh to LV an	en VCT normal -0112C d L.V-01	level has been , OPEN LV-0112B then CLOSE LV-0 12E.	returned and 112D	
D4.2.17	OPERATI mainta:	E unit In the	system above	s as necessary conditions.	to	
1	a. I: vi E	f requ acuum,	ired to then P	break condense: ROCEED to Sectio	r on	
	b. In Ma	f it i ode 6, Refuel	s inten then G ing Ent	ded to proceed to 12007-C, ry",	to	
	c. If he He	f it i at up atup	s inten , then to Hot t	ded to commence GO to 12001-C, ' Shutdown''.	unit "Unit	

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PAGENO

UNIT NO.

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SECTION E. Secondary Plant Shutdown

REVISION

NOTE

This section directs secondary plant activities during unit shutdown and can be used in conjunction with primary system cooldown operations.

The subsections of this section are:

- E4.1 Transfer From Steam Dumps to Atmospheric Relief valves.
- E4.2 Feeding Steam Generators With Condensate Pump.
- E4.3 Breaking Condenser Vacuum.

E4.4 Secondary Systems activities.

E4.1 TRANSFER FROM STEAM DUMPS TO ATMOSPHERIC RELIEF VALVES

INITIALS

E4.1.1 TRANSFER to the SG Atmospheric Relief Valves by performing the following:

- a. <u>Slowly OPEN</u> each atmospheric relief while verifying a reduced steam dump demand signal on UI-507,
- b. VERIFY that the Steam Dump Control Valves close if PIC-507 is in AUTO or if operating in MANUAL, <u>slowly</u> CLOSE the Steam Dump Control Valves while opening each atmospheric relief,
- c. When all Steam Dump Control Valves are closed, ENSURE PIC-507 is in MANUAL,
- BALANCE the positions of each atmospheric relief while maintaining Tavg as desired.

DUEDUHE NO.			REVISION	PAGE NO.	The second division and the second second second
VEGP	12006	~ C	15		38 of 45
UNIT NO.	-				INITIALS
E4.2	FEEDI PUMP	NG STE	AM GENERATORS WITH CON	DENSATE	
E4.2.1	At th feedi runni the f	e USS' ng Ste ng Con ollowi	s discretion, INITIATE am Generators with the densate Pump by perfor ng:	ming	
	a.	VERIFY 550 ps	SG pressure is less t ig,	:han	
	Ъ	VERIFY the re Fearin indica	that lube il pressur set MFP and MFP Turbin gs is 10 to 12 psig by tions,	re to ne v local	
	c.	OPEN the open of t	he reset MFP Discharge cing the Control Switc ULL-TO-LOCK at the Mai 1 Panel QMCB:	valve h in n	
		SGFP A	HS-5208,		
		SGFP B	HS-5209.		
	d.	If not both th	previously performed, rains of Feedwater Iso	RESET lation:	
		(1) H	S-40049 for Train A,		-
		(2) HS	S-40050 for Train B.		-
	e. (OPEN a	ll BFIV's,		
	f.	CONTINU level u	JE maintaining desired utilizing the BFRV's.	SG	

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		annen de merere en		
UNIT NO.				INITIA
E4.3	BREAKING	CONDENSER VACUUM		
E4.3.1	If necess Steam Sys alternate 13761, "A	ary, TRANSFER the Auril: tem steam supply to the unit or Auxiliary Boil uxiliary Steam System".	lary er per	-
E4.3.2	TRANSFER to the Au "Turbine			
E4.3.3	TRANSFER Auxiliary "Condense	the SJAE steam supply to Steam Supply per 13620 r Air Ejection System".	o the	
E4.3.4	CLOSE the	MSIVs and Bypasses.		-
		CAUTION		
		Breaking condenser vac will result in a MFPT Vac Trip. If AFWAS ha been defeated, then bo MFPs tripped will resu a AFWAS initiation.	uum Low s not th lt in	
E4.3.5	PLACE the Handswite	e standby MDAFW Pump(s) thes in PULL-TO-LOCK.		10 Top, 10 To a car of a
E4.3.6	BREAK con the Stear Condenser "Condenser	ndenser vacuum and SHUT n Jet Air Ejectors and t r Vacuum Pumps per 13620 er Air Ejection System".	DOWN he	
E4.3.7	PERFORM AFWAS sig	the following to reset t gnal:	he	
	a. RESI MFP Thomas VAC RESI TRII RESI	ET the AFWAS by resettin I Low Vacuum Trip by entarily placing the MFF TRIP BYPASS Handswitch ET position and MFPT A(F P RESET HS-3169 (3170) t ET position,	T-A(B) to 3) to the	
	b. If THR Val	running a MDAFW Pump, th OTTLE the AFW Flow Contr ves to the pre-initiation	rol on	

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UNIT NO.	and the second second second			INITIAL
	c. If ap Blowd HV-76	plicable, ENSURE the S own Isolation Valves 03A(B,C,D) open.	G	
E4.3.8	After the atmospheri Seal Syste Seal Syste	condenser pressure rea c, SHUT DOWN the Turbi m per 13825, "Turbine m".	ches ne Steam Steam	
E4.3.9	MAINTAIN t Turning Ge Operation" Feedwater	he main Turbine and MF ar per 13800, "Main Tu and 13615, "Condensat Systems".	PTs on rbine e and	
E4.4	SECONDARY	SYSTEM ACTIVITIES		
E4.4.1	If condense not anticipand feedwa than 200°F Feedwater And Feedwa	ate and feedwater clear pated, then when conder ter metal temperatures , SHUT DOWN the Conden System per 13615, Conde ter Systems".	nup is nsate are less sate and ensate	
E4.4.2	NOTIFY Cher Condensate per 13616, Deminerali:	mistry and SHUT LOWN th Filter Demineralizer : "Condensate Filter zer System".	he System	
E4.4.3	If the second se	ondary outage is planned days, then PERFORM the	ed to	
	a. When temper 200°F PLACE layup	condensate and feedwate rature is between 90°F , COORDINATE with Chemi the Feedwater Heaters	er metal and istry and in wet	
	b. When Treach Turnin Turbin	furbine metal temperatu ambient, REMOVE Turbin ng Gear per 13800, "Mar ne Operation",	ures ne from Ln	
	c. During PLACE for 4	the unit outage, or control the Turbine on Turning to 6 hours.	e a week, g Gear	

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UNIT NO.	and the second				INITIALS
E4.4.4	If requir on the MS Turbine O	ed, PLACE a s Rs per 13800, peration".	team blanke "Main	t	Notice in the local sector
E4.4.5	If requir Circulati SHUT DOWN per 13724	ed, for Conde ng Water Syst the Circulat , "Circulatin	nser Waterbo en maintenai ing Water System g Water System	ox or ace, ystem tem".	
	If require inspection of the Con 13724, "C	ed for mainte a, then INITI ndenser Water irculating Wa	nance or ATE drainin; boxes per ter System"	8	
E4.4.6	If main go inspection purging the 13810, "G	enerator main n is planned, ne main gener enerator Gas	tenance or then INITIA ator per System".	ATE	
	If hydroge maintained during the hydrogen p than 5 psi	en atmosphere d, then MINIM e outage by r pressure to n lg.	is to be IZE usage educing ot less		
E4.4.7	SHUT DOWN System by	the Isophase performing t	Bus Duct Co he following	ooling g:	
	a. At 48 Isoph on th	BOV AC SWGR N mase Bus Duct me applicable	BO3, OPEN Heater Brea unit:	iker	
	UNIT	1: 1NB03-1	6,		
	UNIT	2: 2NB03-1	6.		-
	b. At lo runni Fan M Fan M	ng fan using No. 1 and/or 1 No. 2.	CB, STOP the HS-16550 fo HS-16551 for	r	
Completed	Sig	nature	Date	/Time	
Reviewed	Sig	nature	Date	/Time	
Comments		en al a desta del tato resta con e a resta un resta con terra de se de ser de			
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5.0	REFERENCE	s	
5.1	PROCEDURE	s .	
5.1.1	00410-C,	"Computer Software Contr	rol"
5.1.2	10006-C,	"Reactor Trip Review"	
5.1.3	12001-C,	"Unit Reatup To Hot Shut	tdown''
5.1.4	12002-C,	"Unit Heatup To Normal C And Pressure"	perating Temperature
5.1.5	12003-C,	"Reactor Startup"	
5.1.6	13003,	"Reactor Coclant Pump Op	veration"
5.1.7	13005,	"Reactor Coolant System	Draining"
5.1.8	13006,	"Chemical And Volume Cor And Normal Operation"	itrol System Startup
5.1.9	13007,	"VCT Gas Control And RCS	Chemical Addition"
5.1.10	13009,	"CVCS Reactor Makeup Con	strol System"
5.1.11	13010,	"Boron Thermal Regenerat	ion System"
5.1.12	13011,	"Residual Heat Removal S	ystem"
5.1.13	13120,	"Containment Building Co	oling Systems'
5.1.14	13125,	"Containment Purge Syste	'''
5.1.15	13601,	"Steam Generator And Mai Operation"	n Steam System
5.1.16	13605,	"Steam Generator Blowdow System"	m Processing
5.1.17	13610,	"Auxiliary Feedwater Sys	tem"
5.1.18	13615,	"Condensate And Feedwate	r Systems"
5.1.19	13616,	"Condensate Filter Demin	eralizer System"
5.1.20	13617,	"Feedwater Heater Extrac System"	tion, Vent And Drain
5.1.21	13620,	"Condenser Air Ejection	System"
5.1.22	13724,	"Circulating Water Syste	em**

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5.1.23	13760,	"Auxiliary Steam Boiler System"
5.1.24	13761,	"Auxiliary Steam System"
5.1.25	13800,	"Main Turbine Operation"
5.1.26	13810,	"Generator Gas System"
5.1.27	13825,	"Turbine Steam Seal System"
5.1.28	1.4000,	"Operations Shift and Daily Surveillance Logs"
5.1.29	14005,	"Shutdown Margin Calculations"
5.1.30	14210,	"Containment Building Penetrations - Refueling"
5.1.31	14748,	"AFW Check Valve Cold Shutdown Inservice Test"
5.1.32	14915,	"Special Conditions Surveillance Logs"
5.1.33	24695,	"N.I. System Source Range Channel Calibration"
5.1.34	24696,	"N.I. System Source Range Channel Calibration"

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UNIT NO.				DA	.TE	
	RCS/	PRZR TEMP	ERATURE AN	D PRESSU	IRE	
		DAT	A SHEET 1			
TIME	Lowest Channel of TI-0413B TI-0423B TI-0433B TI-0443B PCC TEMP	PRZR	TEMP	PI-438 PI-405	LR or	PRZR/RC
TIME	KCS ILMP	11-0434	11-0433	FRGR	RESS	DELIAL
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					anter activity of the little	which the strange strange as the same
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Comment	8					
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Approvel Procedure No Vogtie Electric Generating Plant 12007-C or khold NUCLEAR OPERATIONS Revision No. Data 14 Unit COMMON Georgia Power Page No. of 24 UNIT NO. DATE 1 ... MID LOOP STEPS AND PAGES REFUELING ENTRY 1.4, 2. 2.4, 2.2.15 (MODE 5 TO MODE 6) 4.1.1,4.1.3 1.0 PURPOSE This procedure provides instructions for taking the unit from a cold shutdown (Mode 5) with Reactor Coolant temperature between 80 and 130 degrees, to refueling condition (Mode 6), and initiating core alterations. 2.0 PRECAUTIONS AND LIMITATIONS 2.1 PRECAUTIONS 2.1.1 If this procedure is terminated prior to completion, the Unit Shift Supervisor (USS) should note the reason for the termination in the comments section. 2.1.2 Notify Health Physics prior to performing operations evolutions which may significantly alter radiation levels. Notify Chemistry prior to installing or removing the 2.1.3 Containment Equipment Hatch that containment ventilation flow will be changed during this evolution. 2.1.4 During periods of operation with the Reactor Coolant System (RCS) level below the Reactor Vessel Flange elevation (194 feet elevation), ongoing work activities should be closely scrutinized and any work activity limited that has the potential for reducing RHPS capability. 2.1.5 : Inadvertent Containment Ventilation Isolation (CVI) may occur during the movement of the Reactor Vessel Head from the cavity to the head stand. Ensure Health Physics initiates compensatory actions to prevent inadvertent actuations. 9202190447 2418.

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2.2	LIMITATION	S		
2.2.1	The RCS pro- psig and 3 Removal (R)	essure and tem 50 degrees whe HR) System.	perature sh n open to t	all not exceed 425 the Residual Heat
2.2.2	In Mode 5, equal to t) 3 1.1.2, F	shutdown marg he limit speci igure 3.1-2.	in shall be fied in Tec	greater than or hnical Specificatio
2.2.3	While in Mo with the Re fully tens: maintained shall be ma whichever i 1208-U4-175 shall be cl stops), exc opened for provided th a setpoint background.	ode 6 (whenever eactor Vessel 1 ioned or with at 0.95 or les aintained great is more restric 5, 1208-U4-177 losed and secun cept 1208-U4-1 short periods he Hi Flux at 1 of less than of . (Technical 1	r fuel is i Head Closur the head re ss, or the ter than cr ctive. Add , 1208-U4-1 red in posi 76 and 1208 of time fo Shutdown Al or equal to Specificati	n the Reactor Vess e Bolts less than moved) Keff shall boron cricentration equal to 2000 ppm itionally, valves 83 and 1208-U4-176 tion (by mechanical -U4-177 may be r chemistry control arm is operable with 2.30 times on 3.9.1)
2.2.4 DEC	When in Moo Train shall	de 5, with loop l be operable a	os filled, and in oper	at least one RHR ation, and either:
MID COOTIES MID COOTIES	a. One ad b. The se Steam range	condary side v Generators sha level. (Techr	rain shall water level all be grea nical Speci	be operable, or of at least two ter than 17% of wid fication 3.4.1.4.1)
2.2.5	While in Mo trains shall shall be in 1200-U4-175 shall be cl stops), exc opened for provided th a setpoint background.	ode 5 with the 11 be operable 1 operation. H 5, 1208-U4-176, 10sed and secur 2ept 1208-U4-17 short periods 1e Hi Flux at 5 of less than of (Technical 5	RCS loops and at lea leactor Mak 1208-U4-1 red in posi 6 and 1208 of time fo Shutdown Al or equal to Specificati	not filled, two RHE st one RHR train eup Water Valves 77, and 1208-U4-183 tion (by mechanical -U4-177 may be r chemistry control arm is operable wit 2.30 times on 3.4.1.4.2)
2.2.6	When in Mod equal to 23 least one R (Technical	le 6, with the feet above th UHR train shall Specification	water leve ne Reactor be operab 3.9.8.1)	l greater than or Vessel Flange, at le and in operation
2.2.7	When in Mod above the R be operable	le 6, with the leactor Vessel and at least	water leve Flange, tw one RHR tr	l less than 23 feet o RHR trains shall ain in operation.

				PAGENO	
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2.2.8	While in Mo on, at leas Protection	des 4, 5, a t one of th Systems (CO	nd 6 with t e following PS) shall b	he Reactor Ves Cold Overpres e operable:	sel Head sure
	a. Two Po settin establ 3.4-4,	wer Operate gs which do ished in Te or	d Relief Va not exceed chnical Spe	lves (PORV) wi the limits cification Fig	th lift ure
	b. Two RH of 450	R Suction R psig ±3%,	elief Valve or	s each with a	setpoint
	c. The RC reliev (Techn	S depressur ing at leas ical Specif	ized with an t 670 gpm wa ication 3.4	n RCS vent cap ater flow at 4 .9.3)	able of 70 psig.
2.2.9	Wnile in Moo Boron Inject	des 5 and 6 tion Flow Pa	, at least o aths shall b	one of the follow operable.	lowing
	a. A flow Boric A the Rea Storage	path from Acid Transfo actor Coolar a Tank is op	the Boric Ad er Pump and nt System is perable, or	a Charging Pur the Boric Act	nk via a np to - id
	b. The flo Tank (H Coolant is open	ow path from RWST) via a System if Table. (Tea	the Refuel Charging Pu the Refueli chnical Spec	ing Water Stor mp to the Read ng Water Stora ification 3.1.	rage tor ige Tank (2.1)
2.2.10	The temperat coolant in t 70 degrees w Steam Genera Specificatio	ture of both the Steam Ge when the pre- tor is great on 3.7.2)	n the primar enerators sh essure of ei ater than 20	y and secondar all be greater ther coolant i 0 psig. (Tech	than n the nical
2,2.11	While in Mod Nuclear Inst NR-45 and th alarm operab	le 5 at leas rumentation le COL ROL F le.	st one chann should be ROOM HI FLUX	el of Source F selected to Re LEVEL AT SHUT	lange corder DOWN
2.2.12	While in Mod shall be ope the Control Containment 3.9.2)	e 6 both So rable with Room and on and Control	ource Range continuous le with audi Room. (Te	Neutron Flux M visual indicat ble indication chnical Specif	Conitors tion in t in the fication
2.2.13	The reactor hours prior Pressure Ves	shall have to moving i sel. (Tech	been subcri rradiated f nical Speci	tical for at 1 uel in the Rea fication 3.9.3	east 100 actor
2 2 14	During Core	Alteration	diam'r ar		1.11 F

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2.2.15

While in Modes 5 and 6, with the RCS level below Reactor Vessel Flange elevation (194 feet elevation), the RWST will be operable with a minimum volume of 99,404 gallons (9% of instrument span) of water at a boron concentration between 2400 and 2600 ppm.

3.0 INITIAL CONDITIONS

3.1 The RHR System is in operation at a minimum flow of 3000 gpm and RHR letdown is in service.

3.2 Sufficient Carbon Dioxide and Nitrogen is on hand or ordered to support plant operations.

3.3 If required, there is sufficient volume available in the RWST at a minimum boron concentration of 2400 ppm to support refueling operations.

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		REVISION	AGENO			
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UNIT NO.			INITIALS			
4.0	INSTRUCT	IONS				
4.1	MODE 5 A	ND 6 OPERATIONS				
		NOTE				
		Asterisk (*) steps beside INITIALS spaces indicates steps that generate additional documents.				
4.1.13	While ope 17% press 207 feet controls	erating with the RCS level belo surizer level (approximately elevation) the following should be in effect:	ow			
	a. Tygo time whil (app pres	on tube watch is required any the RCS level is being change the RCS level is below 172 proximately 207 feet elevation asurizer level,	ed			
	(1)	Periodic comparison checks should be made every 4 hours between the Control Room Temporary RCS Level Monitors and the Tygon tube,	£ - *			
	(2)	The Control Room Monitors should agree within 7 percent of scale with the Tygon tube,				
	(3)	Two out of three Level Monito must agree before draining PC below the top of the hot leg (188 feet 3 inches),	25 25			
	(4)	If neither Control Room RCS Level Monitor is available, then a continuous Tygon tube watch should be established				
			R	EVISION	PAGEN	0.
----------	-------	---	--	--	----------------------------------	----------
VEGP	12007	7 - C	1	14		6 of 24
UNIT NO.		- North Conception and				INITIALS
• *	Ъ.	If it less t Vessel the fo shall	is that I F be	intended to drain down n 3 feet below the React lange (191 ft. el.) ther owing additional control placed in effect:	to tor ls	
		(1) I a b c t t	DETI Cont and Dein Dr H to n three Vess	ERMINE closure status of tainment Equipment Hatch ENSURE hatch is capable ing closed within 57 minu ENSURE hatch is closed p reducing RCS level below the feet below the Reacto sel Flange (191 ft. el.)	e of ites prior v pr	
		(2) A p l p s d b a t	421 ene hou lete ind	eview of all Containment etrations addressed in 0, "Containment Buildir etrations - Refueling" ald be accomplished to ermine those which have a opened by manual means an info LCO generated for the identified,	r	• • • •
		(3) A t a t	mi her vai he	nimum of two incore mocouples shall be lable during periods wh Reactor Head is install	ere ed,	
		(4) R d t t	EQU esi her ca emp Com	EST I&C reset the gnated ERF incore mocouples alarm setpoin larm at 10°F above desi erature per 00410-C, puter Software Control"	t red	
		(5) I i o a t	f S nst pen ve he	G Nozzle Dams are to be alled and no cold leg ing is to be establishe nt path is required fro Reactor Vessel upper pl	d, m enum.	
		T	his y:	vent path can be satis	fied	
		()	a)	Removing a pressurizer manway, or		
		(1	6)	Removing a Steam Gener manway on a hot leg th will not be dammed, or	ator at	
		1	()	Removing three process	inor	

		neviore.	I ACCENTY C
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UNIT NO.			INITIALS
	(6)	If SG Nozzle Dams are to b installed and a cold leg opening is the establish a vent path is required for the Reactor Vessel Upper Plenum by removing an SG manway on an HL that will be dammed.	not
	(7)	If it is intended to opera at one foot above mid-nozz level, the preferred RHR configuration is one train operating with a flow of 3 gpm,	te le 000
	(8)	While operating with SG No Dams installed, ENSURE one Safety Injection Pump is c of being racked in and ope in the hot leg injection m needed,	zzle apable rated ode if
	(9)	While level is in the regi the hot legs, TREND RHR Pu parameters on ERF for carl detection of possible RHR degradation due to vortexi	on of mp y Pump ng,
	(10)	Minimum RCS level is one f above mid-nozzle (188 feet 0 inches elevation) except Steam Generator burping du initial drain down. For effective SG tube draining level should be lowered to 187 feet 6 inches. Upon completion of SG burping, RCS level to 188 feet - 0 and MAINTAIN at this level thereafter.	oot for ring , RCS RAISE inches
	(11)	A minimum of 4 Containment Cooling Units will be oper and capable of being start if required while RCS leve below 191 feet elevation.	able ed l is

		REVISION	PAGE NO.
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UNIT NO.	40000 000000 holing and a set		INITIAL
4.1.2	MAINTAIN R to 130 deg gpm by adju necessary p Removal Sys	CS temperature in range of rees and a total flow of 30 usting the RHR System as per 13011, "Residual Heat scem".	00
(4.1.3)	During RCP SG primary RCS level a (one foot a	seal package maintenance of side inspections, MAINTAIN at 188 feet - 0 inches above mid-nozzle elevation)	ания •
		NOTE	
		Maintain RCP seal injection in operation while RCS level is greater than 190 feet - (inches elevation.	10
4.1.4	During prep head remova than or equ below Vessa	paration for Reactor Vessel al, MAINTAIN RCS level less al to 192 feet (two feet al Flange elevation).	*
4.1.5	If the outs ENSURE that to refuelin "CVCS React	age is for refueling, then the RCS has been borated ig concentration per 13009, for Makeup Control System".	

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UNIT NO.				TNTTTAL
4.2	PREPARATI	ONS FOR REFUELING		
4.2.1	Twelve ho water fro Cavity or INITIATE preparati sample.	urs prior to trans m the RWST to the the Reactor Vesse RWST recirculation on for RWST chemis	ferring Reactor 1, in try	
4.2.2	VERIFY th Canal Gat	at the Fuel Pool T e is closed.	'o Transfer	
4.2.3	PREPARE t level for Transfer the follo	he Refueling Cavit refueling operati System checkouts b wing:	y lower ons and Fuel y performing	
		NOTE		
		This step may be just prior to hea Intent is to prov lead time to fill tube to establish penetration water preparation for h provide water lub Fuel Transfer Sys	deferred to d lift. ide early the transfer a containment seal in ead lift and rication for tem checkouts.	
	a. PERF	ORM the following mment:	prefill	
	(1)	CLOSE and TAG Cav Isolation on the unit:	ity Drain applicable	
		UNIT 1: 1-1901-	U6-260,	
		UNIT 2: 2-1901-	U6-260,	
				TV
	(2)	ENSURE Maintenance installed the 2 B on the 12 inch dra the Refueling Cav	e has lind Flanges ain lines in ity,	

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UNIT NO.			INITIALS
	(3)	ENSURE Maintenance has completed Reactor Cavity Sealing per 93240-C, "Rea Vessel Assembly/Disassemb Instructions",	ctor ly
	(4)	ENSURE Maintenance has rep the Transfer Tube Blind F per 93240-C, "Reactor Ves Assembly/Disassembly Instructions",	moved lange sel
	(5)	If the Transfer Canal leve has been lowered to below Transfer Tube elevation, UNLOCK and OPEN the Trans Tube Gate Valve,	el the then fer
	(6)	After the RWST has recircu for a minimum of 6 hours, CONTACT Chemistry to take sample from the RWST to ve total suspended solids concentration is within specifications.	a erify
		If total suspended solids concentration is out of specifications, INITIATE F Cleanup per 13719, "Spent Fuel Pool Cooling And Purification System".	RWST
		NOTE	
		If the Transfer Canal is flooded above the Transfer Tube elevation with the Transfer Tube Gate Valve closed, then Step 4.2.3b may be N/A'd.	
	b. FILL from Syste least (appr Fuel per 1 Cooli	the lower Reactor Cavity the RWST via the SFP Cooli m to an elevation of at 188 feet - 0 inches toximately 2 feet above the Transfer Tube centerline) 3719, "Spent Fuel Pool ing And Purification System	ing

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UNIT NO.					INITIALS
	c. If th fille initi grab Speci	e lower rea d, then NOT ate daily p samples (Te fications T	ctor cavity IFY Chemist lant vent 1 chnical able 4.11-1	y was try to Fritium 2 Note 4).	
Person Co	ontacted		Date	3	Time
4.2.4	PERFORM th preparatio applicable	e following n valve ali; unit:	refueling gnment on t	the	
	a. ENSUR INNER (OSS)	E CLOSED RC: GASKET ISO EL - 172 fee	S RV SEAL I	KOFF	
	UNIT	1: 1-1201.	-U4-087		
	UNIT :	2: 2-1201.	-U4-087		<u> </u>
	b. CLOSE GASKE	RCS RV SEAL I ISO. (OSS	LKOFF OUT EL - 172 f	'ER 'eet)	
	UNIT 1	l: 1-1201-	·U4-088		
	UNIT 2	2: 2-1201-	U4-088		IV
	c. CLOSE	RV LEAKOFF	ISO HV-803	2,	
1	d. ENSURE SEAL S	CLOSED REA SUPPORT DRAI	CTOR CAVIT	Y	
	UNIT 1	: 1-1213-	U4-088		Man and a state of the state of
	UNIT 2	: 2-1213-	U4-088		IV
					IV

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UNIT NO.					INITIALS
4.2.5	If de pre-h to 80 HS-12	estred, heating PF by P 470 and	reset the FHB HVAC Coil Thermostat from 70 placing local handswitch HS-12471 to the ON pos)°F Nes sition.	
4.2.6	NOTIF locks plugs Bello and C	Y Healt d or po for th ws in t ontains	th Physics to establish osted access on the cond he Fuel Transfer Tube the Fuel Handling Buildi ment Building.	a rete ng	
4.3	MODE	6 ENTRY			
4.3.1	Prior deten (Mode	to Mai sioning 6 entr	ntenance Department the first Reactor Head y), PERFORM the followi	Bolt	
			NOTE		
		If in de th an su pe ti Mo	the target time for en to Mode 6 has slipped d lays or holds, then rev e Pre-refueling Checkli d reperform those appli rveillances required to rformed within the spec me frames prior to entr de 6.	try ue to iew st cable be ified y into	* *****
	a.	INITIAT complet within prior t	E Mode 6 Entry Checklis ing those applicable st the specified time fram o entry into Mode 6,	t 1, eps es	
	b.	OBTAIN Change Surveil all def surveil Mode 6	from the Control Room M Binder or OBTAIN from t lance Tracking Coordina erred (not performed) lance tests required fo entry.	ode he tor r	
3					

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UNIT NO.	- AND TAXABLE IN CASE AND ADDRESS OF	and the Course States			INITIALS
	с.	REVIEV	W the following for impact ing Mode 6.	on	
		(1)	Jumper and Lifted Wire Log,		
		(2) 1	Cemporary Modification Log,		-
		(3) E	Equipment Clearance Log,		and the second s
		(4) I	.CO Book,		-
		(5) 0	Ducstanding Work Orders.		-
			NOTE		
		T s l	Wo RCS Core Exit Thermocou hall be maintained when RC evel is less than 191 ft.	ples S el.	
	d.	COORDI Superv follow disass comple Vessel Instru	NATE with the Outage Area isor to ensure that the ring Reactor Vessel Head embly activities have been ted per 93240-C, "Reactor Assembly/Disassembly actions".		* +4 Minut
		(1) S	eismic Tie Rods moved,		
		(2) C	ables disconnected,		
		(3) H	ead Insulation removal,		
		(4) H	ead Vent piping disconnect	,	
		(5) R	VLIS Head connection isconnected,		
•		(6) I d	nstrument port Conoseal isassembly complete.		
4.3.2	OBTAIN approv Mode	V On-S val to 5.	hift Operations Supervisor chauge status from Mode 5	's to	
	5	sos s	ignature / / Date Tim	ne	
4.3.3	When r that t has co Unit (hotifi the Re commence Contro	ed by Maintenance Departmen actor Vessel Head detension ed, LOG Mode 6 entry into a l Logbook and INITIATE Mode eadings	nt ning the e 6	

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	al miner de la deservante de la seconda de seconda de				
UNIT NO.					TNTTT
4.4	MODE 6 OP	ERATIONS			
4.4.1	In addition surveillan to initian if applica least once Specifican	on to the sche nces, NOTIFY (te Boron analy able, the Refu e per 72 hours tion 4.9.1.1)	eduled Mode Chemistry D vsis of the meling Cavi S. (Techni	6 epartment RCS and, ty at cal	
Person C	ontacted	a benetti berutu at attana ana ana ana ana ana a	Date	Tir	ne
4.4.2	COMPLETE t Reactor Ve	the following essel Head lif	to prepare t:	for	
		NOT	E		
		As a precauti Building Pene Technical Spe will be estab periods of Re Head movement	on, Contain trations cification lished dur: actor Vessa	nment 3.9.4 ing 21	
	a. NOTIF the C will venti	Y Chemistry t ontainment Eq change contai lation flow.	hat closure uipment Hat nment	e of tch	
	b. NOTIF Conta Syste	Y Maintenance inment Person m,	to reset t nel Lock Ir	the iterlock	
	c. PERFO Build Refue	RM 14210, "Co ing Penetrati ling",	ntainment ons Verific	ation -	
	d. ENSUR for R "Resi	E one train o efueling Cavi dual Heat Rem	f RHR is al ty fill per oval System	igned 13011, ",	
					and provide the formula of

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UNIT NO.			INITIA
		. · CAUTION	
		Inadvertent Containment Ventilation Isolation (may occur during the mo of the Reactor Vessel H from the cavity to the stand. Ensure Health P initiates compensatory to prevent inadvertent actuations.	CVI) vement ead head hysics actions
	e. COOR Supe foll comp Vess Inst	DINATE with the Outage A rvisor to ensure that th owing activities have be leted per 93240-C, "Reac el Assembly/Disassembly ructions".	rea e en tor
	(1)	Power and Signal Cables	removed,
	(2)	Flux Thimbles withdrawn	×
	(3)	Tools removed from refu cavity.	eling
4.4.3	After the Outage Ard filling the feet - 6 deck) per System".	head lift, COORDINATE we a Supervisor and INITIA he Refueling Cavity to 2 inches (2 feet below ope 13011, "Residual Heat R	ith TE 18 rating emoval
	During the Refueling Check Value	e process of filling the Cavity, PERFORM 14895, ve Refueling Inservice T	"ECCS est".
4.4.4	If the Low previously to initiat grab samp Table 4.11	ver Reactor Cavity was no filled, then NOTIFY Char te daily plant vent Trit les. (Technical Specific 1-2 Note 4)	ot emistry ium cation
Person Co	ontacted	Date	Time
4.4.5	During the preparation MAINTAIN H 218 feet - minus 3 in	e remainder of refueling ons and core alterations Refueling Cavity level a 6 inches plus 0 inches aches.	£

		PLGENC).
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UNIT NO.			INITIAL
4.4.6	PLACE the R System in s Fuel Pool C System".	Refueling Cavity Filtration ervice per 13719, "Spent cooling And Purification	
		NOTE	
	R I W a t i t b A	emoval of the Upper nternals Assembly and withdrawal of any RCCA ssembly in excess of hree feet from its fully nserted position within he Reactor Vessel should e considered as Core lterations.	
4.4.7	Prior to mo Assembly, C steps of Co	ving the Upper Internals OMPLETE the applicable re Alterations Checklist 2.	
4.4.8	After the U been set in the Refueli stable at 2 that the fu equal to the	pper Internal Assembly has the storage location and ng Cavity level has been 18 feet - 6 inches, VERIFY el pool level is approximately e transfer pool level.	
	a. If the not op then U Tube G	Transfer Gate Valve was ened per Step 4.2.3a(5), NLOCK and OPEN the Transfer ate Valve,	
	b. OPEN th Canal (he Fuel Pool To Transfer Gate.	SHOTE SAME SHIPS & MANNE & MANNESS AND
4.4.9	NOTIFY Chem: Containment RE-0002 and	istry to reset PERMS Low Range Area Monitors 0003 to the low setpoint.	-

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UNIT NO.			INITIA
4.4.10	Prior to tr loads within Pool with an the Normal the Low Neg FHBI actuat Actuation Ca the followin	ansporting fuel or other n or over the Spent Fuel pent fuel in the pool an FHB HVAC in service, UNB ative Differential Press ion channels at the BOP abinet QESF by performin ng:	d LOCK ure g
	a. VERIFY is abov by obse A-ZI-12 handswi	the FHB negative pressure we the actuation setpoint erving white lights 2567 and A-ZI-12568 at Ltch A-MS-2533C OUT,	re t
	b. PLACE H the OFF	handswitch A-HS-2533C to F position.	-
4.4.11	Prior to com COMPLETE Con	mmencing fuel shuffle re Alterations Checklist	2.
	LOG the date Alterations Control Logb	and time that Core are started in the Unit book.	
4.4.12	During Core Alterations 1 hour, then alterations, REPERFORM th required to specified ti initiating c	Alterations, if Core cease for greater than prior to commencing cor REFER to Checklist 2 ar tose applicable surveilla be performed within the me frames prior to tore alterations.	re id inces

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ONLI NO.	ACCORDENT AND A DESCRIPTION OF THE OWNER AND ADDRESS				INITIA
4.5	POST-REFUE	LING OPERATIO	NS		
		CAUT	ION		
		Monitor Fuel frequently to sealing.	Pool level verify gate	is	
4.5.1	Upon compl post refue SEAL the F	etion of Core ling verifica wel Pool To T	Alterations tion, CLOSE ransfer Cana	and and 1 Gate.	
4.5.2	VERIFY tha in the stor LOCK the	the Fuel Tropic for the solution.	ansfer System then CLOSE a Gate Valve.	n is and	
4.5.3	SHUT DOWN System per And Purific	the Refueling 13719, "Spen cation System	Cavity Filts t Fuel Coolis	ng	
4.5.4	TERMINATE to PROCEED to (Mode 6 to	the use of th 12000-C, "Re Mode 5)".	is instructio fueling Recov	on and very	Î
COMPLET IN					
WWEEK LOW'E LOLD	Signat	cure	Date	Time	-
REVIEWED:				1	
	Signat	ture	Date	Time	
COMMENTS:	-	allower broken method line descendency before an			
			a San Fariya San		
		an a sea anna 2 anna anna anna an a' Suan ann an anna anna anna	and a manufacture of the most data of the or an an annual sec	Mining a Printing and an and a state of a second second	
	have a second start of a second start of a second start of the sec	seconds, association applies constituted and alternatives for weaking	the second concernant contract of the second s	all here all desires one tracks to and the set	
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	£				

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			and the second se			
5.0	REFERENCE	<u>s</u>				
5.1	"Preparat Refuelin	ions For Refueling", Westing Guidelines.	nghouse			
5.2	PROCEDURE	S				
5.2.1	13011,	"Residual Heat Removal Sys	stem"			
5.2.2	13009,	"CVCS Reactor Makeup Contr	rol System"			
5.2.3	13105,	"Safety Injection System"				
5.2.4	13005,	"Reactor Coolant System Di	raining"			
5.2.5	13615,	"Condensate And Feedwater	Systems"			
5.2.6	13719,	"Spent Fuel Pool Cooling And Purification System"				
5.2.7	14210,	"Containment Building Penetrations Verification - Refueling"				
5.2.8	12000-C,	"Refueling Recovery (Mode	6 to Mode 5)"			
5.2.9	93240-C,	"Reactor Vessel Assembly/I Instructions"	Disassembly			

END OF PROCEDURE TEXT

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	M	10DE 6 ENTRY CHEC	KLIST 1		
UNIT NO.	-	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		INIT	I
1.0	Prior to en following h during the requirement into Mode 6	tering in Mode 6 has been successful specified interva s therein are men	, VERIFY the ully complet al and the t for ertry	e ted	
1.1	Within 31 d	lays prior to ente	ering Mode (5 1	
	a. 14228, Survei	"Operations Mont llance Logs".	thly		
		Date	Time	eretaini causia	-
	b. 14514- Post-A Operab with i	C, "Fuel Handling ccident Exhaust S ility Test". (Or rradiated fuel in	g Building System hly applicat h the FHB.)	ole	
		Date	/ Time	1	
1.2	Within 7 da	ys prior to enter	ing Mode 6:		
	a. 14225. Survei	"Operations Week llance Logs",	tly		
		Date	/ Time	American	
	b. 14423, Channe	"Source Range NI 1 Operational Tes	S Analog		
		Date	/ Time	-	
1.3	Within 72 h	ours prior to ent	ering Mode	6:	
	ENSURE that following re	the more restric eactivity conditi	tive of the ons is met:		
	a. 14005, and DE necessa	"Shutdown Margin TERMINE that boro ary for Keff of 1	Calculation concentra ess than 0.	ns", tion 95.	

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UNIT NO.				I	NITIAL
	b. An RC	S boron analys	is from Chem	terry	
. *	Depar is eq	tment and VERI ual to or grea	FY concentra ter than 200	tion 0 ppm.	
	RCS B	oron	ppm		
		Date	/ Time	-	
1.4	Within 12 1	hours prior to	entering Mo	de 6:	
	COMPLETE 1 Daily Logs therein are	4000, "Operation ", and VERIFY to e met for entry	ons Shift An the requirem y into Mode	d ents 6.	
		Date	/ Time		
REVIEWED:			,		
	Signature	National Advances of the second stand from a second standard strength and	Date Time		4
COMMENTS.					1
COMMENTS:	the state of the s				
	A state and the instrumental state of the state of the	nadionikani (1994) (nananingkana), na atau yang mananingkana	and a line of the difference with his particular part of a solu	territori della internazione della seconda e della seconda di	e seiere 3
	CARGENERS WITH MALE AND A DESIGN AND A REAL PROPERTY OF A DESIGN AND A	and the second			
		ne of departments and All the departs of the second second second second second second second second second se	en men kan den men den kan den men men den der der der beseichen	a national data data data data data data data da	and the second state of th
				a tala mandala na ang ang ang ang ang ang ang ang ang	
				1 Mar 2010 (1997) (1997) (1997) (1997) (1997) 1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997)	
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			Sheet	1 of 3
	<u>C0</u>	RE ALTERATIONS CHECKLIS	<u>T 2</u>	
UNIT NO.	And in the second secon			INITIAL
1.0	Prior to e VERIFY the	stablishing Core Altera following:	tions,	
1.1	Within 7 d Alteration Machine lo test has b (Only appl	ays prior to establishi s, VERIFT the Fuel Hand ad test and crane inter een successfully comple icable prior to crane u	ng Core ling lock/stop ted. se.)	
		1		
이 영상 가지 않는 같이 있는 것이 같이 있다.		Date Tim	e	
1.2	Within 100 Alteration	hours prior to establi s VERIFY the following:	shing Core	
	a. The R been appli assem assem or con the re	efueling Machine Load T successfully completed. cable during movement of blies, rod control clus blies, thimble plug ass ntrol rod drive shafts w eactor vessel.)	est has (Only f fuel ter emblies, within	5 (1) (1) (1)
		Date /	e .	
	b. The Lo and an moveme Reactor comple moveme contro plug a shafts	bad Test on each Auxilia ssociated Load Indicator ent of Drive Rods within or Vessel has been succe eted. (Only applicable ent of fuel assemblies, ol cluster assemblies, for assemblies, or control resources within the reactor ves	ary Hoist r used for n the essfully during rod thimble rod drive ssel.)	
		Date / Time	B	
	c. NOTIFY Contai System	Maintenance to reset to Inment Fersonnel Lock In M.	the nterlock	
	d. VERIFY Builds Refuel comple	that 14210, "Containme Ing Penetrations Verific Ling", has been satisfac ated.	ent cation- ctorily	

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UNIT NO.				Shee	t 2 of 3 INITIALS
1.3	Within 24 1 Core Alter	hours prior t ations:	o estabi:	shing	
	NOTIFY Cher required po During Refo	mistry to per er 35180-C, " ueling".	form anal Chemistry	lysis V Control	
		Dat	e / T3	lme	-
1.4	Within 8 ho Alterations	ours prior to s:	establis	shing Core	
	COMPLETE 14 Channel Ope	4423, "Source erational Tes	Range NI t",	IS Analog	
		Dat	e /	Ime	
1.5	Within 2 ho Alterations	ours prior to	establis	shing Core	
	VERIFY that is at least (23 feet at (Only appli	t the Refuelin 217 feet - bove the Reac leable during	ng Cavity 0 inches tor Vesse fuel mov	v water level elevation el flange). vement.)	
	Refueling (Cavity Level	ft		
		Date	e / Ti	me	-
1.6	Within 1 ho Alterations	our prior to a	establish	ling Core	
	a. VERIFY Contro applic establ Shift	communication of Room and per- cable Refueling ished using And Daily Log	ons betwe ersonnel ng Static 14000, "O gs".	en the at the ons has been operations	
		Date	e Ti	me	

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UNIT NO.				Sheet 3 of 3 INITIAI
	b. VERIFY subcri record subcri during the re	that the R tical for a ling the dat ticality. movement o actor vesse	eactor has b t least 100 e and time o (Only applic f irradiated 1.)	een hours by f able fuel in
	Subcri	tical Date	/ Time	
	Comple	ted Date	/ Time	
REVIEWED:	Gioneture		1	Advances in a
COMMENTS			Date IID	e
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proval	Vogtle Electric Generating Plant	1 3 0 0 5 = 1			
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2-23-90		212212215			
MIDLOOP ST	re-so	2.1.9.2.1.10			
	REACTOR COOLANT SYSTEM DRAIMING	4.1.8, 4.1.15, 4.1.			
1.0	PURPOSE (4.	2.18, 4. 2. 18, 4.2. 2			
	This procedure provides the necessary in partially draining the Reactor Coolant S Procedure instructions include the follo	structions for ystem (RCS). wing:			
	4.1 RCS Draining Via The RCDT				
	4.2 RCS Draining Via The RHR System				
	4.3 Preparation For Opening The RCS Fol Via The RCDT	lowing Draining			
	4.4 Opening The RCS To Atmosphere				
2.0	PRECAUTIONS AND LIMITATIONS				
2.1	PRECAUTIONS				
2.1.1	During the early stages of an RCS drain operation, a nitrogen gas blanket should be provided in the pressurizer and Reactor Vessel Head to avoid a hydrogen hazard when air is initially admitted to the system through the vents.				
2.1.2	The RCS level shall be maintained greater than or equal to an elevation of 188 feet whenever the Residual Heat Removal (RHR) System is in service except for Steam Generator tube burping at which time level will be maintained at 187 feet 6 inches.				
2.1.3	During draining to one foot above mid-r feet), trend RHR Pump parameters on ERI detection of possible RHR Pump degradat vortexing.	nozzle (188 7 for early tion due to			
2.1.4	Seal injection flow to the Reactor Coo seals shall be established if the water RCS is above the level of the seals in prevents crud infiltration into the se	lant Pump (RCP) r level in the the RCP. This al chamber.			
	28.00.				

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2.1.5	The RCS will entr unless th prevencs	should not be er the RCS fr he proposed m draining of	drained to on the pre- maintenance the SG tube	o the point ssurizer su requires i es.	where air rge line, t. This
2.1.6	Observe a venting	all applicabl radioactive g	e Health Pl ases and v	nysics proc apor.	edures when
2.1.7	The Heal to perfor radiation	th Physics De rming evoluti n levels.	partment sl lons which t	nould be no nay signifi	tified prior cantly affect
£2.1.83	If it is on React then the into eff	intended to or Head, Stea following R(ect:	drain down am Generato 33 Level Co	to perform rs (SG's) o ntrols show	n mai: enance or RCP Seals ild be placed
	a. If mid is	it is intende -nozzle level one train ope	ed to opera l, the pref erating wit	te at one f erred RHR o h a flow of	foot above configuration f 3000 gpm,
	b. 7/g lev bel pre	on tube watch el is being (ow 17% (appro ssurizer leve	n is requir changed whi oximately 2 el,	ed any time le the RCS 07 feet ele	e the RCS level is evation)
	c. Per hou Mon	iodic compart rs between th itors and the	ison checks ne Control e Tygon tub	should be Room tempor e,	made every rary RCS Lev
	d. The per	Control Room	m Monitors e with the	should agr Tygon tube	ee within 7
	e. Two dra (18	out of thre ining RCS le 8 feet - 3 in	e Level Mon vel below t nches),	itors must he top of	agree befor the hot leg
	f. If ava sho pre	neither Cont ilable, then uld be estab ssurizer lev	rol Room RC a continuo lished whil el,	S Level Mo us Tygon t e RCS leve	nitor is ube watch 1 is below l
	g. Whi tre det vor	le level is nd RHR Pump ection of po texing.	in the regi parameters ssible RHR	on of the on ERF for Pump degra	hot legs, early dation due t
2.1.93	If level draining indicati	indication will be sto on resolved.	is lost or pped and th If necess	bocomes su ne problem ary, raise	spect, with the RCS level t

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(E.1.103	Only one d operators Appropriat aware of d	rain path sh shall be awa e log entria rain flow pa	hall be use are of the es shall be aths.	d at a tim path being made to k	e and used. eep personne
2.1.11	When drain (RCDT), do being moni	ing via the not drain i tored for le	Reactor Co from the sa evel.	olant Drai me loop(s)	n Tank that are
2.2	LIMITATION	S			
2.2.1 SURPORTS MIDLOOP	During Col Loops fill operation operable o two Steam range. (T	d Shutdown ed, one RHR and either o r the second Generators s echnical Spe	(Mode 5) wi train shal one additio dary side w shall be gr ecification	th the Rea 1 be opera nal train ater level eater than 3.4.1.4.1	ctor Coolant ble and in shall be of at least 17% wide)
2.2.2	During Col Loops not one train 3.4.1.4.2)	d Shutdown (filled, two in operation	(Mode 5) wi RHR trains h. (Techni	th Reactor shall be cal Specif	Coolant operable wit ication
3.0	PREREQUISI	TES AND INIT	TIAL CONDIT	IONS	
3.1	The Recycl effluent.	e Holdup Tar	nks are cap	able of re	ceiving drai
3.2	The Liquid receiving	Waste Proce drain efflue	essing Syst ent.	em is capa	ble of
3.3	The Auxili	ary Gas Syst	tem - Nitro	gen is ope	rating.
3.4	The Pressu 3-5 rsig N	rizer Relie: 2 pressure.	f Tank (PRT) is in se	rvice, with
3.5	The RCDT i Recycle Ko	s in service ldup Tank.	e with disc	harge alig	ned to the
3.6	The RHR Sy service.	stem is open	rating with	RHR letdo	wn in
3.7	The RCS ha Section D	s been prepa of 12006-C,	ared for sy "Unit Cool	stem drain down To Co	ing per 14 Shutdown"
3.8	Communicat Control Ro level and	ions have be om and Conte pressure mor	een establi ainment to hitoring du	shed betwe ensure ade ring the d	en the quate RCS raining

PROCEDURE)	REVISION			PAGE NO
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4.0	INSTRUC	TIONS		
4.1	RCS DRA	INING VIA THE	RCDT	
4.1.1	RACK OU	T and TAG the	applicable	breakers per Table 1.
£4.1.2	If the Calibra install 54840-1 RCS Tem Defeat Closure	RCS is to be tion Level 1- the RCS leve , "Installati perary Level Of The Residu Interlock".	drained belo LI-0462, NOT 1 monitoring on And Remov Indication T al Heat Remo	w 25% Pressurizer Cold IFY Maintenance to instrumentation per al Instructions For The ygon Tube And The val Suction Valve Auto
4.1.3	NOTIFY common Header	Maintenance t RCS Loop Drai Isolation 1-1	o install th n Header ups 901-U6-242.	e spool piece in the tream of Loop Drain
4.1.4	VERIFY capacit	the Recycle H y to support	oldup Tanks draining ope	have sufficient rations.
4.1.5	ALIGN n space a	itrogen from s follows:	the PRT to t	he Pressurizer steam
4.1.5.1	CONNECT Pressur	temporary su izer Spray Li	pply hose fr ne Vent:	om the PRT Vent to the
	a. RE 1- f1	MOVE Blind Fl 1201-U4-115 a ange,	ange at PRT nd INSTALL a	Vent Valve Chicago fitting at
	b. AT 1-	NACH a hose t 1201-U4-115,	o the Chicag	o fitting at valve
	c. REI Va	MOVE pipe cap lve 1-1201-X4	at the Pres -084 and INS	surizer Spray Line Vent TALL a Chicago fitting,
	d. AT 4. 1-	TACH the othe 1.5.1b to the 1201-X4-084.	r end of the Chicago fit	hose installed in Step ting at Vent Valve

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		NOTE	
	E i o t L k	nsure that the hose con n Step 4.1.5.1d slopes r vertical all the way he PRT to the Pressuriz ine Vent with no restri inks.	nected upward from er Spray cting
4.1.5.2	ALIGN nitro Drain Heade	gen through the Pressur	izer Safety Loop Sea
	a. ENSURE Relief	CLOSED Reactor Head Ve Tank 1-HV-0442A and 1-	nts To Pressurizer HV-04/2B,
	b. ENSURE Supply	OPEN Pressurizer Relie Isolations 1-HV-8033 a	f Tank Nitrogen nd 1-HV-8047,
	c. ENSURE 1-PV-0	OPEN Pressurizer Spray 455C,	s 1-PV-04558 and
	d. OPEN P Isolat	ressurizer Tety Loop ion 1-1201- 105,	Seal Drain Header
	e. OPEN P Drain	ressurizer Safety 1-PSV 1-1201-U4-102.	-8010A Loop Seal
4.1.5.3	ALIGN nitro from PRT to	gen through the tempora Pressurizer Spray Line	ry hose connection Vent:
	a. OPEN P	RT Vent valve 1-1201-U4	-115,
	t. OPEN P 1-1201	ressurizer Spray Line V -X4-072 and 1-1201-X4-0	ent Valves 84.

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4				an an a da anna an an an an an an anna an an an a
4.1.6	ALIGN the R as follows:	leactor Coolant	Drain Tank (RCD)	() and pumps
		NOTE		
	A 1 0	all controls are ocal Panel PLPP otherwise noted.	located on unless	
	a. ENSURE	both RCDT Pump	s are stopped:	
	(1) F	CDT Pump #1,	1-HS-1003A,	
	(2) F	CDT Pump #2,	1-HS-1003B.	
	b. CLOSE	RCDT Recirculat	ion 1-HV-7144,	
	c. CLOSE	RCDT Outlet Iso	lation 1-HV-7127	7.
	d. ENSURE	RCDT TO PRT Is	olation 1-HV-714	l is closed,
	e. UNLOCK 1-1901	and OPEN RCDT	Level Control By	rpass
	f. At Cor Discha Isolat	ntrol Room Panel arge Inside and tions 1-HV-7699	QMCB, ENSURE OF Outside Contains and 1-HV-7136.	PEN RCDT Pump ment
4.1.7	UNLOCK and 1-1901-U6-2	OPEN RCS Loop D 242. CAUTIO	nain Header Isol	lation
		o not drain fro loop(s) that are monitored for RC	m the same). being S level.	
4.1.8	OPEN at les	st one pair of the RCS:	the following va	alves to allo
4.1.8.1	RC Loop 2 I	rain Isolation	1-1201-U4-052	
	RC Loop 2 D	orain To RCDT Is	olacion 1-1201-1	J4-208
4.1.8.2	RC Loop 3 I	Drain Isolation	1-1201-04-030	
	RC Loop 3 I	Drain To RCDT Is	olation 1-1201-0	J4-209
			1 1001 11/ 071	
4.1.8.3	RC Loop 4 I	orain Isolation	1=1201=04=071	

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			NOTE		
			Draining the RCS c with the start of Pumps.	ommences the RCDT	
4.1.9	DRAIN follo	V the	RCS to 50% Pressur	izer Level 1-LI-0462	8.5
	ä.	STAR	T at least one RCDT	Pump,	
		(1)	RCDT Pump #1 using	1-HS-1003A,	
		(2)	RCDT Pump #2 using	1-HS-1003B.	
			CAUTION		
			The PRT Rupture Di fail if a vacuum i in the PRT.	sks may s drawn	
	ь.	MONI	TOR PRT Pressure 1-	PI-0469,	
	¢.	MONI 1-12	TOR RCS Pressure on 01-U4-100,	the temporary gauge	at
			NOTES		
		a.	If the activity le Waste Gas Decay Sh is sufficiently lo to ALARA as determ Health Physics and the Waste Gas Syst used to supply nit draining the RCS. Gas System is used Step 4.1.2 of 1300 "Pressurizer Relie Operation".	evel in the nutdown Tank w to conform nined by I Chemistry, em may be rogen for If Waste 1, refer to 04-1, ef Tank	
		b.	At the discretion Shift Supervisor (Nitrogen (N ₂) pres raised above norma in the PRT to enha maintenance of a p pressure in the RC PRT.	of the Unit USS), soure may be al pressure ince cositive CS and the	
	d.	ADJU CYCL Dosi	ST PRT Nitrogen Sup E RCDT Pumps as nec tive PRT Pressure 1	ply Regulator 1-PCV- cessary to maintain a -P1-0469.	803

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		ang ng kang sang sang sang sang sang sang sang s					
4.1.10	At 50% Pressurizer Level 1-LI-0462, STOP draining as follows:						
	a. ENSU	RE both RCDT Pumps are	stopped:				
	(1)	RCDT ump #1, 1	-HS-1003A,				
	(2)	RCDT Pump #2, 1	-HS-1003B.				
	b. CLOS Isol	S RCDT Pump Discharge ation 1-HV-7699.	Inside Containment				
4.1.11	If it is PERFORM S	desired to stop draini tep 4.3.	ng and open the RCS,				
		NOTE					
-		The Reactor Vessel F1 at an elevation of 19	ange is 4 feet.				
4.1.12	To contin Flange, P service a	ue draining the RCS to LACE the Tygon hose le s follows:	the Reactor Vessel vel indication in				
	a. <u>Slow</u> 1-12	ly OPEN Pressurizer St 01-U4-100,	eam Space Sauple Vent				
	b. OPEN	RCS Loop 1 Drain Isol	ation 1-1201-U4-001,				
~	c. <u>Slow</u> Isol	ly OPEN RCS Loop 1 Tyg ation 1-1201-U4-003.	on Hose Connection				
(4., 53) 	NOTIFY I& monitorin Water Lev	C Department to instal g instrumentation per el System".	1 the remote RCS level 23985-1, "RCS Temporary				
4.1.14	If the Re atmospher Vessel He	actor Vessel Head has e per Step 4.4, then S ad as follows:	not been vented to UPPLY N_2 to the Reactor				
	a. ENSU Inle	RE CLOSED RCS Excess L t 1-HV-8098,	etdown Heat Exchanger				
	b. OPEN	all Reactor Head Vent	Isolations:				
	(1)	1-HV-8095A,					
	(2)	1-HV-8096A,					
	(3)	1-HV-8095B,					
	(4)	1-HV-8096B.					
	c. OPEN Tank	both Reactor Head Ver	ts To Pressurizer Relie				
	(1)	1-HV-0442A,					
	(2)	1-HV-0442B.					

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			Constant of the statement of the stateme				
	1111	CAUTION					
	\sim	Maintain a positive pro	essure in				
	(··· · · (··· · · · · · · · · · · · ·	the RCS. Do not drain	the RCS				
	\rightarrow	can be fed into the RC	S. A				
	(negative pressure may the Tygon hose, cause	collapse a false				
	7	reading on Tygon tube	vessel (
		pressurizer level indi	cation,				
4.1.15	DRAIN the by the Typ	RCS to an elevation of gon hose as follows:	194 feet as indicated				
	a. OPEN	RCDT Pump Discharge In	side Containment				
	unti	tion 1-HV-7699 by hold 1 the valve is fully op	en,				
	b. STAR	T at least one RCDT Pum	p i				
	(1)	HS-1003A for RCDT Pu	mp #1,				
	(2)	1-HS-1003B for RCDT Pu	mp #2.				
		CAUTION					
		The PRT Rupture Disks if a vacuum is drawn i	may fail n the PRT.				
	c. MONI	TOR PRT Pressure 1-PI-0	469,				
	d. MONI 1-12	TOR RCS Pressure on the C1-U4-100,	temporary gauge at				
		NOTE					
		If the activity level	in the				
		Waste Gas Decay Shutdo	wn Tank				
		to ALARA as determined	by				
		Health Physics and Che the Waste Gas System m	mistry, av be used				
		to supply nitrogen for	draining				
		is used, refer to stup	4.1.2 of				
		Tank Operation".	Keller				
	e. ADJU	ST PRT Nitrogen Supply	Regulator 1-PCV-8034				
	CYCL	E RCDT Pumps as require	d to maintain a 0469.				
	post	Sale and a consider (- CA-					

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*				
4.1.16	At 194 fee	t, STOP draining	g as follow	15 :
	a. ENSUR	E both RCDT Pump	os are stop	oped:
	(1)	RCDT Pump #1,	1 - HS - 1	003A.
	(2)	RCDT Pump #2,	1 - HS - 1	0038.
	b. CLOSE Isola	RCDT Pump Disch tion 1-HV-7699.	narge Insid	le Containment
4.1.17	If it is d PERFORM St	esired to stop o ep 4.3.	draining an	nd open the RCS, 2
4.1.18	At the USS be drained Generator	discretion, Ste by the addition Channel Heads pe	eam Generat n of nitrog er Checklis	for Tube bundles may on to the Steam at 1.
		CAUTIONS	5	
	a.	If the Steam Ger drained per Step the RCS water le Reactor Vessel M coolant will beg the SG's in slug level indication	herators we b 4.1.18, t evel reache Nozzles, th gin to drai gs causing h.	re not then as as the ne n from erratic
	э.	Upon approaching region, trend RH on ERF for early possible RHR Pur to vortexing.	g RCS hot 1 HR Pump par y detection np degradat	eg ameters of ion due
		NOTE		
		The middle of this at an elevation	ne vessel r ion of 187	nozzles feet.
4.1.19	To continu elevation,	e draining the F PERFORM the fol	RCS to the llowing:	188 feet - 0 inches
	a. OPEN Isola until	RCDT Pump Discha tion 1-HV-7699 t the valve is fu	arge Inside by holding ally open,	Containment 1-HS-7699 in OPEN
	b. START	at least one RO	CDT Pump:	
	(1)	RCDT Pump #1,	1 - HS - 1	.003A,
	(2)	RCDT Pump #2	1-HS-1	0038

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			CAUTION					
		The P if a	RT Rupture Di vacuum is dra	lsks may fa wn in the	PRT.			
	с.	MONITOR PR	T Pressure 1.	PI-0469,				
	d.	d. MONITOR RCS Pressure on the temporary gauge at 1-1201-U4-100,						
	е.	ADJUST PRT CYCLE RCDT positive P	Nitrogen Sur Pumos as rec RT Pressure 1	ply Regula uired to m -PI-0469.	itor 1-PCV-8034 o maintain a			
		not d then the 1 eleva to fa Level this close drain and m	rained per Si during burpin evel should b tion 187 feet cilitate SG of will be erra operation, an ly monitored. ing is comple aintain level	tep 4.1.18, ng of the S be lowered 6 inches draining, tic during d should b When SG te, raise at 188 fe	e et.			
4.1.20	At 1	188 feet, ST	OP draining a	is follows.				
	a.	ENSURE bot	h RCDT Pumps	are stoppe	d :			
		(1) RCDT	Pump #1,	1-HS-100	3A,			
			D	1-HS-100	38.			
		(2) RCDT	rump #2,					

13005-1 If the SG M Channel Hea Drain Line a. SG 1 b. SG 2	fanways are id by opening Isolation at 1=1201= 1=1201= 1=1201=	10 to be oper the appl nd Root Va U4-202, U4-247	12 of 28 ned, then DRAIN the SG licable SG Channel Head alves:
If the SG M Channel Hea Drain Line a. SG 1 b. SG 2	fanways are id by opening Isolation at 1=1201= 1=1201= 1=1201=	to be oper g the appl nd Root Va U4-202, U4-247	ned, then DRAIN the SG licable SG Channel Head alves:
If the SG M Channel Hea Drain Line a. SG 1 b. SG 2	fanways are id by opening Isolation at 1-1201- 1-1201- 1-1201-	to be oper g the appl nd Root Va U4-202, U4-247	ned, then DRAIN the SG licable SG Channel Head alves:
a. SG 1 b. SG 2	1 - 1 2 0 1 - 1 - 1 2 0 1 - 1 - 1 2 0 1 -	J4-202,	
b. SG 2	1 - 1 2 0 1 - 1 - 1 2 0 1 -	16-247	
b. SG 2	1-1201-	Concernant Provide Pro	
		U4-203,	
	1-1201-	U4-248,	
c. SG 3	1 - 1 2 0 1 -	U4-204,	
	1-1201-	U4-249,	
d. SG 4	1-1201-	U4-205,	
	1-1201-	U4-250.	
	NO	TE	
	SG Channel H will remain are off.	ead Drain open whil	Valves e manways
To open the	e RCS, PERFO	RM Step 4	.3.
RCS DRAINI	NG VIA THE R	HR SYSTEM	(
RACK OUT a	nd TAG the a	pplicable	breakers per Table 1.
If the RCS Calibratio install RC 54840-1, " RCS Tempor Defeat of Closure In	is to be dr n Level 1-L1 S level moni Installation ary Level In The Residual terlock".	ained bel -0462, NO toring in And Remo dication Heat Rem	ow 25% Pressurizer Cold TIFY Maintenance to strumentation per val Instructions For Th Tygon Tube And The noval Suction Valve Auto
VERIFY the capacity t	Recycle Hol o support di	dup Tanks aining op	have sufficient perations.
	d. SG 4 To open the RCS DEAINI RACK OUT a If the RCS Calibratio install RC 54840-1, " RCS Tempor Defeat of Closure In VERIFY the capacity t	d. SG 4 1-1201- 1-1201- NO SG Channel H will remain are off. To open the RCS, PERFO RCS DRAINING VIA THE R RACK OUT and TAG the a If the RCS is to be dr Calibration Level 1-LI install RCS level moni 54840-1, "Installation RCS Temporary Level In Defeat of The Residual Closure Interlock". VERIFY the Recycle Hol capacity to support dr	 d. SG 4 1-1201-U4-205, 1-1201-U4-250. NOTE SG Channel Head Drain will remain open whil are off. To open the RCS, PERFORM Step 4 RCS DKAINING VIA THE RHR SYSTEM RACK OUT and TAG the applicable If the RCS is to be drained bel Calibration Level 1-LI-0462, NO install PCS level monitoring in 54840-1, "Installation And Remo RCS Temporary Level Indication Defeat of The Residual Heat Rem Closure Interlock". VERIFY the Recycle Holdup Tanks capacity to support draining op

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	a de servició de la construcción de la construcción de la constru	All second as the contract of the second	
4.2.4	ALIGN nitro space as fo	ogen from the FRT to the bllows:	Pressurizer steam
4.2.4.1	CONNECT nit Pressurizer	rogen supply hose from Spray Line Vent:	the PRT Vent to the
	a. REMOVE 1-1201 flange	blind flange at PRT Ve -U4-115 and INSTALL a C	nt Valve hicago fitting at
	b. ATTACH 1-1201	i a hose to the Chicago -U4-115,	fitting at valve
	c. REMOVE valve	pipe cap at Pressurize 1-1201-X4-084 and INSTA	r Spray Line Vent LL a Chicago fitting,
	d. ATTACH 4.2.4. 1-1201	the other end of the h lb to the Chicago fitti -X4-084.	ose installed in Step ng at Vent Valve
		NOTE	
	E i o t L k	nsure that the hose con n Step 4.2.4.1b slopes r vertical all the way he PRT to the Pressuriz- ine Vent with no restri- inks.	nected upward from er Spray cting
4.2.4.2	ALIGN nitro Drain Heade	gen through the Pressur r.	izer Safety Loop Seal
	a. ENSURE Relief	CLOSED Reactor Head Ver Tank 1-HV-0442A and 1-1	nts To Pressurizer HV-0442B,
	b. ENSURE Supply	OPEN Pressurizer Relies Isolations 1-HV-8033 and	f Tank Nitrogen nd 1-HV-8047,
	c. ENSURE 1-PV-0	OPEN Pressurizer Spray: 455C,	s 1-PV-0455B and
	d. OPEN P Isolat	ressurizer Safety Loop : ion 1-1201-U4-105,	Seal Drain Header
	e. OPEN F Drain	ressurizer Safety 1-PSV- 1-1201-U4-102,	-8010A Loop Seal
4.2.4.3	ALIGN nitro from PRT to	gen through the temporan the Pressurizer Spray 1	ry hose connection Line Vent.
	a. OPEN P	RT Vent Valve 1-1201-U4	-115,
	b. OPEN P 1-1201	ressurizer Spray Line Ve-X4-072 and 1-1201-X4-08	ent Valves 84.

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						an av entre a contra contra contra contra de la contra de l
4.2.5	ENSUR	RE RHR	letdown i	s in service.		
4.2.6	INITI	ATE R	CS drainin	g as follows:		
			1	NOTE		
			If chemist draining the bed, 1-TV-0 to the CVC	ry conditions nrough the CV 0129 must be S mixed bed.	require /CS mixed positione	d
	a.	PLACE	Letdown To	Demin/VCT,	1-TV-0129	to the VCT
	ь.	PLACE	Letdown D ion,	ivert 1-HV-01	12A in th	e HUT
			1997 - I	NOTE		
			Letdown flo to 120 gpm design flow Bed Deminer Reactor Coo	w should be to prevent e through the ralizer and t plant Filter.	limited xceeding Mixed he	
	c.	ADJUS requi 1-FI-	T Letdown 1 red to obta 0132A (RCS	Pressure Cont ain the desir drain rate),	roller 1- ed Letdow	PIC-0131 as m Flow
			(CAUTION		
			The PRT Rug if a vacuum	oture Disks m n is drawn in	ay fail the PRT.	
	d.	MONIT	OR PRT Pres	ssure 1-PI-04	69,	

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		NOTES	
	a.	If the activity level in Waste Gas Decay Shutdown is sufficiently low to co to ALARA as determined by Health Physics and Chemis the Waste Gas System may used to supply nitrogen is draining the RCS. If Was Gas System is used, refer 13004-1, "Pressurizer Re Tank Operation".	the Tank onform y stry, be for ste r to lief
	ь.	At the discretion of the N ₂ pressure may be raised normal pressure in the Pl enhance maintenance of a positive pressure in the and PRT.	USS, d above RT to RCS
	e. ADJUS 1-PIC Press	T PRT Nitrogen Supply Rep -0131 as required to main ure 1-PI-0469.	gulator 1-PCV-8034 or ntain a positive PRT
4.2.7	MAINTAIN V draining a	CT Level 1-LI-0185 betwee s follows:	en 30% and 50% while
	a. When 1-HV-	1-LI-0185 falls to 30%, 1 0112A in the VCT position	PLACE Letdown Divert n,
	b. When the H	1-LI-0185 rises to 50%, 1 UT position.	PLACE 1-HV-0112A in
4.2.8	MONITOR Pr	essurizer Level 1-LI-046	2.
4.2.9	At 50% Pre follows:	ssurizer Level 1-LI-0462	, STOP draining as
	a. PLACE posit	Letdown Divert 1-HV-011	2A in the VCT
	b. ADJUS and/o Press	T Letdown Pressure Contr r charging and seal inje urizer Level 1-LI-0462 b	oller 1-PIC-0131 ction to maintain etween 40% and 50%.
4.2.10	If it is d PERFORM St	esired to stop draining ep 4.4.	and open the RCS,

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					NOT	ſΈ		
			The	Reac	tor \	lesse	FI	lange is
(inin			ac	an er	evaça	on o		14 LEEL.
4.2.11	Flange servic	e, PL	e d ACE fo	the the	ng tr Tygor i	he KC		evel indication in
	a. 5	310w1	y 01 1-0	PEN P 4-100	ressu	irize	- St	team Space Sample Vent
	b. (PEN	RC 1	Loop	1 Dre	in I	018	ation 1-1201-U4-001,
	c. S	low1 sola	y Ol tion	PEN R n 1-1	C Loc 201-U	p 1 1400	Cygo	on Hose Connection
(4.2.12)	NOTIFY monito Water	(I&C pring Leve	Dej in: 1 Sy	partm strum ystem	ent t entat	o in ion p	stal ber	11 the remote RCS level 23985-1, "RCS Temporary
4.2.13	If the atmosp Vessel	Rea here Hea	ctor per d an	r Ves r Ste s fol	sel H p 4.4 lows:	lead 1	nas en S	not been vented to SUPPLY N ₂ to the Reactor
	a. E	NSUR	E C1 1 - 1	LOSED HV-80	RCS 98,	Exce	s I	Letdown Heat Exchanger
	ь. с	PEN	all	Reac	tor H	lead \	/ent	t Isolations:
	(1)	1 - HV	V-809	5A,			
	(2)	1 - HV	V-809	5A,			
	(3)	1 - HV	V-809	5В,			
	(4)	1 - HV	V-809	6B.			
	c. O	PEN 'ank :	botl	h Rea	ctor	Head	Ver	nts To Pressurizer Relie
	(1)	1-H1	V-044.	сΑ,			
		~ .	1 111					
	(2)	7 - 11	V=044,	2B.			

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		-V-L	and the second sec
		CAUTION	
		Maintain a positive p the RCS. Do not drai at a rate faster than can be fed into the R negative pressure may the Tygon hose, cause reading on the Tygon the pressurizer level	oressure in In the RCS In nitrogen ICS. A I collapse I a false tube and I indication.
4.2.14	DRAIN the by the T	e RCS to an elevation o ygon hose as follow :	of 194 feet as indicated
_	a. PLA pos	CE Letdown Divert 1-HV- ition,	0112A in the HUT
		NOTE	
		Letdown flow should b to 120 gpm to prevent design flow through t Bed Demineralizer and Reactor Coolant Filte	be limited t exceeding the Mixed d the er.
	b. ADJ req 1-F	UST Letdown Pressure Co uired to obtain the des I-0132A (RCS drain rate	ontroller 1-PIC-0131 as sired Letdown Flow a),
		CAUTION	
		The PRT Rupture Disk: if a vacuum is drawn	s may fail in the PRT.
	c. MON	ITOR PRT Pressure 1-PI	-0469,
	d. MON 1-1	ITOR RCS Pressure on th 201-U4-100,	he temporary gauge at
		REVISION	PAGE NO.
--------	--	--	---
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		NOTE	
	I W I U U U U U U U U U U U U U U U U U	f the activity level i aste Gas Decay Shutdow s sufficiently low to o ALARA as determined ealth Physics and Chen he Waste Gas System ma sed to supply nitroger raining the RCS. If W as System is used, ref tep 4.1.2 of 13004-1, Pressurizer Relief Tar peration".	In the m Tank conform by mistry, ay be n for Vaste fer to mk
	e. If app Regula mainta	licable, ADJUST PRT Ni tor 1-PCV-8034 or 1-PI in a positive PRT Pres	itrogen Supply IC-0131 as required to ssure 1-PI-0469.
4.2.15	MAINTAIN VC draining as	T Level 1-LI-0185 betw fr:llows:	veen 30% and 50% while
	a. When 1 1-HV-0	-LI-0185 falls to 30% 112A in the VCT positi	, PLACE Letdown Diversion,
	b. When 1 the HU	-LI-0185 rises to 50%. T position.	, PLACE 1-HV-0112A in
4.2.16	At 194 feet	, STOP draining as fol	llows:
	a. PLACE positi	Letdown Divert 1-HV-01 on,	112A in the VCT
	b. ADJUST and/or level	Letdown Pressure Cont charging and seal in at 194 feet.	troller 1-PIC-0151 jection to MAINTAIN R
4.2.17	If it is de PERFORM Ste	sired to stop draining p 4.4.	g and open the RCS,
4.2.18	At the USS be drained	discretion, Steam Gene by addition of nitrogen hannel Heads per Check	erator Tube bundles ma en to the Steam klist l.

PROCE	DUR	E	N	O.,	

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CAUTIONS

a. If the Steam Generators were not drained per Step 4.2.18, then as the RCS water level reaches the Reactor Vessel Nozzles, the coolant will begin to drain from the SG's in slugs causing erratic level indication.

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b. Upon approaching RCS hot leg region, closely monitor RHR Pump suction and discharge pressure as well as RHR flow rate to ensure early detection of RHR degradation due to vortexing at the RHR Pump suction.

NOTE

The middle of the vessel nozzles is at an elevation of 187 feet.

4.2.19

To continue draining the RCS to 188 feet - 0 inches elevation, PERFORM the following:

 PLACE Letdown Divert 1-HV-0112A in the HUT position,

NOTE

Letdown flow should be limited to 120 gpm to prevent exceeding design flow through the Mixed Bed Demineralizer and the Reactor Coolant Filter.

b. ADJUST Letdown Pressure Controller 1-PIC-0131 as required to obtain the desired Letdown Flow 1-FI-0132A (RCS drain rate),

CAUTION

The PRT Rupture Disks may fail if a vacuum is drawn in the PRT.

- c. MONITOR PRT Pressure 1-PI-0469,
- MONITOR RCS Pressure on the temporary gauge at 1-1201-U4-100,
- e. If applicable, ADJUST PRT Nitrogen Supply Regulator 1-PCV-8034 or 1-PIC-0131 as required to maintain a positive PRT Pressure 1-PI-0469.

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					a an an tao amin' ann an ann an	and a shall of the same first first state of
4.2.20	MAINT	AIN VC ing as	T Level 1-1 follows:	LI-0185 bet	ween 30% an	d 50% while
	а.	When 1 1-HV-0	-LI-0185 f 112A in th	alls to 30% e VCT posit	, PLACE Let ion,	down Divert
	b. 1	When 1 the HU	-LI-0185 r T position	ises to 507	, PLACE 1-H	V-0112A in
		5	N	OTE	1-	
		Iddl ef womcl	f the Stea rained per uring burp evel shoul levation l acilitate ill be err peration, onitored. omplete, r evel at 18	m Generator Step 4.2.1 ing of the d be lowere 87 feet 6 i SG draining atic during and should When SG dr aise and ma 8 feet.	s were not 8, then SGs, the d to nches to . Level this be closely aining is intain	
4.2.21	At 18	8 feet	STOP drai	ning as fol	lows:	
	а.	PLACE pasiti	Letdown Di on,	vert 1-HV-0	112A in the	VCT
2	b	ADJUST ard/cr level	Letdown P charging at 188 fee	ressure Con and seal in t.	troller 1-F jection to	Maintain RC
4.2.22	If th Chann Drain	e SG M el Hea Line	tanways are d by openi Isolation	to be open ng the appl and Root Va	icable SG C	WAIN the SG Channel Head
	a.	SG 1	1-1201	-U4-202,		
			1-1201	-U4-247,		
	ь.	SG 2	1-1201	-U4-203,		
			1-1201	-U4-248,		
	с.	SG 3	1-1201	-U4-204,		
			1-1201	-U4-249,		
	á.	SG 4	1-1201 1-1201	-U4-205, -U4-250.		
			N	OTE		
		5	G Channel vill remain are off.	Head Drain open while	Valves manways	

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	1.4 (ar * langes der reinsahren eine		n an fair an	na na sana na sa
4.3	PREPARATION THE RCDT	FOR OPENI	NG THE RCS F	OLLOWING DRAINING VIA
4:3.1	RESTORE nor	mal RCDT a	lignment as	follows:
	a. CLOSE 1-1901	and LOCK R -U6-242,	CS Loop Drai	n Header Isolation
	CLOSE 1-1901	and LOCK R -U6-038,	CDT Level Co	ntrol Bypass
K	. OPEN R	CDT Outlet	Isolation 1	-HV-7127,
	OPEN R	CDT Recirc	ulation 1-HV	-7144,
	e. OPEN R Isolat until	CDT Pump D ion 1-HV-7 1-HV-7699	ischarge Ins 699 by holdi is fully ope	ide Containment ng 1-HS-7699 in OPEN n.
4.3.2	ENSURE CLOS	ED the fol	lowing Loop	Drain Valves:
	a. RC Loo	p 2 Drain	Isolation 1-	1201-U4-052,
	b. RC Loc	op 2 Drain	To RCDT Isol	ation 1-1201-U4-208,
	c. RC Loc	e i Drain	Isolation 1-	1201-04-030,
	a. RC Loc	op 3 Drain	To R DT Isol	ation 1-1201-U4-209,
	e. RC Loc	op 4 Drain	Isolation 1-	1201-U4-071,
	f. RC Loc	op 4 Drain	To RCDT Iscl	ation 1-1201-U4-206.
4.3.3	CLOSE PRT V	/ent Valve	1-1201-04-11	.5.
4.3.4	CLOSE Press and 1-1201.	surizer Spr -X4-084.	ay Line Vent	Valves 1-1201-X4-072
4.3.5	ALIGN RCDI follows:	discharge	to the Waste	e Holdup Tank as
	a. OPEN H	RCDT TO LWE	S Isolation	1-1301-06-040,
	b. CLOSE Demine	Unit l RCI eralizer Is	T Pump Tc Re clation 1-19	ecycle Evaporator Feed 901-U4-327.
4.3.6	START one I	RCDT Pump:		
	a. RCDT 1	Pump #1,	1-HS-10	03A,
	b. RCDT I	Pump ∉2,	1-HS-10	03B.

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4.3.7	ISOLATE the VCT fr follows:	om the Waste Gas	Processing System as
	a. ENSURE CLOSED Shutdown Tank	Isolation Valve To VCT 1-1208-U4	Waste Gas Decay •352,
	b. ENSURE CLOSED	VCT TO GWPS ISO	VLV 1-PV-0115.
4.3.8	VENT the RCS to at	mosphere per Step	4.4.
4.4	OPENING THE RCS TO	ATMOSPHERE	
		NOTE	
	The hose should b Purge Ve exhaust.	es used for ventin be routed to the entilation System	ig
4.4.1	NOTIFY Maintenance install a venting Header Vent 1-1201 Pressurizer Spray INSTALL a Chicago	to REMOVE the Bl hose at Pressuriz -U4-105, or to RE Line Vent Valve 1 Fitting and Venti	ind Flange and er Safety Relief MOVE pipe cap at -1201-X4-084 and ng Hose.
4.4.2	NOTIFY Maintenance install a venting System Vent Flow (to remove the Bl hose at Reactor V Gauge 1-FG-8099.	lind Flange and Vessel Head Vent
4.4.3	NOTIFY Maintenance install a venting System Vent 1-1201	e to remove the Bl hose at Reactor N L-U4-086.	lind Flange and Vessel Head Vent
		NOTE	
	At the of the Pres Loop Sea 1-1201-i to vent pressure provide PRT has or isola	discretion of the sourizer (PRZR) Sa al Drain Header Is J4-105 may be left the PRT until des e in the PRT is of d the N ₂ supply to been returned to ated.	USS, afety solation t open sired otained, o the normal
4.4.4	If Pressurizer Spi to be used for ver otherwise, CLOSE I Header Isolation	ray Line Vent Valu nting, CONTINUE w Pressurizer Safet 1-1201-U4-105.	ve 1-1201-X4-084 is ith Step 4.4.5, y Loop Seal Drain
4.4.5	OPEN Pressurizer	Safety 1-PSV-8010	A Loop Seal Drain

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4.4.6	To vent t Safety Re Pressuriz 1+1201-X4	he pressurizer lief Header Ven er Spray Line V -084.	to atmosphere, 0 t 1-1201-U4-106, ent Valves 1-120	OPEN Pressurizer or OPEN 01-X4-072 and
4.4.7	VENT the	Vessel Head to	atmosphere as fo	ollows:
	a. ENSU Reli	RE CLOSED React ef Tank 1-HV-04	or Head Vents To 42A and 1-HV-044	Pressurizer 2B,
	b. OPEN	all Reactor He	ad Vent Isolatic	ns:
	(1)	1-1208-U4-488,	Isolation for 1	-FG-8099,
	(2)	1-1208-04-086,		
	(3)	1-HV-8095A,		
	(4)	1-HV-8096A,		
	(5)	1-HV-8095B,		
	(6)	1-HV-80933.		
5.0	REFERENCE	<u>s</u>		
5.1	TECHNICAL	SPECIFICATIONS		
5.1.1	Technical	Specification	3.4.1.4.1	
5.1.2	Technical	Specification	3.4.1.4.2	
3.2	FSAR			
5.2.1	Section 5	.1		
5.2.2	Section 5	. 2		
5.2.3	Section 5	. 3		
5.2.4	Section 5	. 4		
5.5	PROCEDURE	S		
5.3.1	13703-C,	"Bor	on Recycle Syste	em**
5.3.2	13214-1,	"Liq	uid Waste Proces	ssing System"
5.3.3	13707-C,	"Aux	iliary Gas Syste	em - Nitrogen"
5.3.4	13004-1,	"Pre	ssurizer Relief	Tank Operation
5.3.5	13002-1,	"Rea Ope	ctor Coolant Dra ration"	ain Tank

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5.3.6	13011-1	"Residual Heat	Removal System"
5.3.7	12006-C,	"Unit Cooldown	To Cold Shutdown"
5.3.8	54840-1, "Installation And Removal Instructions For The RCS Tempor Level Indication Tygon Tube And Defeat Of The Residual Heat Ren Suction Valve Auto Closure Interlock"		
5.3.9	23985-1,	"RCS Temporary	Water Level System"
5.4	P&ID's		
5.4.1	1X4D3111	Reactor Coolant	System
5.4.2	1X4DB112	Reactor Coolant	System
5.4.3	1X4DB114	lume Control System	
5.4.4	1X4DB127	Waste Processin	ng System - Liquid
5.5	ONE LINE DIAGRAMS		
5.5.1	1X3D-AA-H01A	125V DC Class 1 Train A	E Distribution
5.5.2	1X3D-AA-H02A	125V DC Class 1 Train B	E .istribution
5.6	ELEMENTARY DIAGRAM	1S	
5.6.1	1X3D-BD-B03F	Reactor Coolant	: System 1-PV-0456A
5.6.2	1X3D-BD-803H	Reactor Coolant	System 1-PV-0455A
5.6.3	1X3D-BD-B03R	Reactor Coolant 1-PV-0455B/0455	System C
5.6.4	1X3D-BD-C05F	CVCS 1-HV-8095B	3/8096B
5.6.5	1X30-BD-C05G	CVCS 1-HV-8095A	/8096A
5.6.6	1X3D-BD-C05H	CVCS 1-HV-0442A	1/0442B

END OF PROCEDURE TEXT

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			TABL	<u>.E 1</u>	
COMPONE	T NAME			BKR NUMBER	POSITION
/1 RCP				1 AAA	RACKED OUT
#2 RCP				1BAB	RACKED OUT
13 RCP				1CAC	RACKED OUT
#4 RCP				1 DAD	RACKED OUT
PRESSURI	ZER HEATER	PANEL.	1NBPB1	1NB01-05	RACKED OUT
PRESSURI	ZER HEATER	PANEL	1NBPB2	1NB10-05	RACKED OUT
PRESSURI	ZER HEATER	PANEL	1NBPB3	1NB09-12	RACKED OUT
PRESSURI	ZER HEATER	PANEL	1NBPC	1NB08-12	RACKED OUT

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	CTEAN	CHECKLIST 1	Sheet 1 of 3
	21040	A GENERATOR TODE BONDLE	THEFTAT
1_0	Notify th and insta bottles v Generator Valve	ne Unit Shift Superviso all two 2000 psig nitro with regulators to each r Channel Head Drain Li	r (USS) gen Steam ne Root
	SG 1	1-1201-U4-202	danta di como casa casa
			IV
	SG 2	1-1201-04-203	
			IV
	SG 3	1-1201-U4-204	
			IV
	SG 4	1-1201-U4-205	
			TV
2.0	Drain eac time by p	ch Steam Generator one performing the followin	at a g:
		NOTE	
		The order of draining Generators and the de for multiple draining the USS discretion.	Steam cision is at
2.1	Cut in th Nitrogen 15 psig.	ne nitrogen bottles and Regulator to approxima	set the tely

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•	CTEA	CHECKLIST 1	Sheet 2 of 3		
	SILC.	A SEMERATOR TODE DONOL	INITIALS		
2.2	Open the Root.	SG Channel Head Drain	Isolation		
	SG 1	1-1201-U4-202			
	SG 2	1-1201-U4-203			
	SG 3	1-1201-U4-204			
	SC 4	1-1201-U4-205			
2.3	Slowly of Isolation	pen the SG Channel Head n.	d Drain		
	SG 1	1-1201-U4-247	ribilitation data - reconnectioning		
	SG 2	1-1201-04-248			
	SG 3	1-1201-U4-249	salautititi utavassassassassas		
	SC 4	1-1201-U4-250			
		NOTE			
		Volume of the Steam (primary side is about cubic feet.	Generator 966		
2.4	When RCS level stops rising, isolate the nitrogen supply by closing the Channel Head Drain Isolation and Root Valves.				
2.5	Drain the RCS to restore level to Reactor Vessel Flange level (194 feet) per Step 4.1 of this procedure.				
2.6	Repeat S remaining	teps 2.1 through 2.5 fo g Steam Generators.	or the		

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		CHECKLIST 1 3	Sheet 3 of 3		
	STEA	M GENERATOR TUBE BUNDLE	DRATNING		
		NOTE			
		If the SG Manways are opened, then leave ha attached and route to drain.	e to be oses o floor		
			INITIAL		
3.0	Remove the nitrogen bottles and regulators from the Channel Head Dr in Lines and notify the USS.				
3.1	Verify S Drain Li closed,	Steam Generator Channel Ine Isolation and Root A nicrogen bottles remove	Head Valves ed.		
	SG 1	1-1201-U4-202			
		1-1201-U4-247			
	SG 2	1-1201-U4-203			
		1-1201-114-248			
	SG 3	1-1201-U4-204			
		1-1201-U4-249			
	SG 4	1-1201-U4-205			
		1-1201-U4-250			